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BIBLIOGRAPHY OF Technical Reports

May 1950

CHEMICAL AND ALLIED PRODUCTS

Agricultural Chemicals

CHEMICAL STUDIES ON FUNGICIDES. PART IV. SYNTHESIS OF CHLORAL AND BUTYL CHLORAL AMIDES, by J. P. LaRocca and W. E. Weaver. U. S. Naval Research Laboratory, Bellevue, D. C. Aug 1949. 9p tables Mi $1.25, Ph $1.25, Mimeo: $.25. PB 100096

Because of the known fungicidal properties of chloral and butyl chloral, derivatives of these compounds were prepared preliminary to fungicidal evaluation. Twenty-three chloral amides and butyl chloral amides were synthesized and some of their physical properties were determined. For Part V see PB 100093. NRL R 3516.

CHEMICAL STUDIES ON FUNGICIDES. PART V. SYNTHESIS OF PROPYLENE OXIDES, by J. P. LaRocca and W. E. Weaver. U. S. Naval Research Laboratory, Bellevue, D. C. Aug 1949. 11p tables Mi $1.75, Ph $2.50, Mimeo: $.25. PB 100093

A study of the reaction of phenol with epichlorohydrin was made, and conditions necessary for the most satisfactory yield of propylene oxides were determined. The synthesis and physical properties of twenty propylene oxides are reported preliminary to fungicidal evaluation. For part IV see PB 100096. NRL R 3520.

Plastics and Plasticizers

INVESTIGATION OF THE DEGRADATION OF POLYMERS. REPORT ON Q.M. PROJECT NO. 93-13-16, FEB 1-28, 1949, by G. M. Kline. U. S. National Bureau of Standards. Mar 1949. 6p table Mi $1.25, Ph $1.25. PB 99780

In order to study the degradation of polymers, polystyrene films were exposed in vacuo to heat and ultraviolet radiant energy for 25 and 7 hr periods at 180 and for 7 hr periods at 100°C. Mass spectrometric analysis of the gaseous decomposition products showed residual solvent, toluene. The mass spectrometric analysis of the gaseous decomposition products obtained when GR-S hydrocarbon was exposed at 100, 140 and 180°C to RS sunlamp radiation for 25 and 50 hrs showed excessive water. Among the other components identified were carbon dioxide, benzene, propane, acetone, pentadienes, butenes, and diethyl ether.

GPO Com.—5

INVESTIGATIONS INTO THE OCCURRENCE OF BREAKS IN PLEXIGLASS, by Dietrich Wapler. Apr 1945. 25f photos (Text in German) Mi $2.00, Enl Pr $5.00. PB 100075

1. Plexiglas - Cracking - Germany 2. Micro BIOS FD 972/48, Frames 1-24.
English abstract included. Abstract available as PB 100075s. 1p. Mi $1.25, Ph $1.25. Title-page is illegible. Thesis-Martin Luther Universität, Halle.

MILLING OF THIN FOILS OF IGELIT PCU. I. G. Farbenindustrie A. G., Schkopau, Ger. 1940. 12f diagrs, graphs Mi $1.75, Enl Pr $3.75. PB 99938

1. Igelit PCU (Trade name) 2. Micro BIOS FD 2332/47, Frames 1-11.
Includes English abstract. Abstract available as PB 99938s. 1p. Mi $1.25, Ph $1.25. See also PB 99935, PB 98150, PB 97880, PB 99937, and PB 99939.

NEW ELASTICISERS. I. G. Farbenindustrie A. G., Ludwigshafen, Ger. 1942. 10f tables (Text in German) Mi $1.25, Enl Pr $2.50. PB 100064

1. Perbunan (Trade name) 2. Plasticizer 89 (Trade name) 3. Plasticizer 88 (Trade name) 4. Plasticizer 77 (Trade name) 5. Plasticizers 6. Softening agents 7. KAUTEKO (Anwendungstechnische Kommission für Kautschuk 8. Micro BIOS FD 1448/48, Frames 1-9.
Includes English abstract. Abstract available as PB 100064s. 1p. Mi $1.25, Ph $1.25.

OPERATIONAL SUITABILITY TEST OF KIT-WELDING, ACRYLATE PLASTIC MATERIALS, TYPE YY-1, by Frank E. Brandeberry, Jr. Jun 1949. 20p Mi $1.75, Ph $2.50. PB 98341

1. Plastics - Welding 2. YY-1 (Welding kit) 3. APGC Proj 34876-5.

OPERATIONAL SUITABILITY TEST OF USE OF CO_2 GAS ON TRANSPARENT PLASTIC PANELS OF CRASHED AIRCRAFT, by James E. Colburn. Jun 1949. 15p photos Mi $1.75, Ph $2.50. PB 98336

1. Plastics - Impact tests 2. Carbon dioxide - Effects 3. APGC Proj 34935-5.

PLASTICS LABORATORY QUARTERLY STATUS REPORT NO. 12, OCT-DEC 1948, by Louis F. Rahm. Jan 1949. 14p Mi $1.75, Ph $2.50. PB 97958

Project status reports which briefly summarize the work done by the Plastics Laboratory are outlined covering the following topics: Mechanical - Electrical Plastic, diradical initiators, structural studies; Potting compounds, preparation of liquid polymers, structure of vulcanized liquid polymers, vulcanization of liquid polymers, ring compounds in "Constant Volume" polymerizations; Laminates - Arc Resistant; High K - Low Loss Materials; Microwave measurements, magnetic permeability of iron oxides, microwave dielectric measurements; Electrical Measurements; Arc Resistance; Crazing of Polystyrene; Impact Strength Studies; and Determination of the Cure of Mold Plastics.

UBER DAS SCHWEISSEN WEICHMACHERHALTIGER KUNSTSTOFFFOLIEN. BEMERKUNGEN ZU DEN AUFSATZ VON G. ZEIDLER UND G. SCHILTZER IN DER ZEITSCHRIFT KUNSTSTOFF-TECHNIK UND KUNSTSTOFF-ANWENDUNG, 12 JAHRG, P 177 (1942) (ON THE WELDING OF PLASTIC FOILS. DISCUSSION OF ARTICLE BY ZEIDLER AND SCHILTZER), by L. Kollok and A. Sirot. 1942. 9f (Text in German) Mi $1.25, Enl Pr $2.50. PB 100324

1. Foils, Plastic - Welding - Germany 2. Micro BIOS FD 229/48, Frames 1-8. English abstract included. Abstract available as PB 100324s. 1p. Mi $1.25, Ph $1.25.

VERSUCHE ZUR HERSTELLUNG VON WEICHMACHERN II (PRODUCTION OF PLASTICIZERS II, BY DR. VON LEIBNITZ-PIWNICKI). I. G. Farbenindustrie A.G., Schkopau, Ger. Nov 1943. 11p (Text in German and English) Mi $1.75, Ph $2.50. PB 98616

A series of esters and their plasticizing properties are discussed, formed from the following types of acids: (I) R-S-CH_2COOH and (II) HOCO.CH_2-S-R-S-CH_2-COOH, where R = any aliphatic radical. Acids of type I are obtained by two different methods: 1) Addition of mercapto acetic acids to olefins and 2) reacting the di-sodium salt of the mercapto acetic acid with halo-hydrocarbons in an unhomogeneous aqueous phase. Acids of type II are all obtained by method 2. Translated by Standard Oil Co.

Paints, Varnishes and Lacquers

BEWITTERUNGSVERSUCHE MIT NEUEN KUNSTHARZBINDEMITTELN. (WEATHERING TESTS ON NEW SYNTHETIC-RESIN GLUES), by K. Berger. Deutsche Versuchsanstalt für Luftfahrt, E. V., Berlin. Apr 1944. 20p graphs (Text in English and German). Mi $1.75, Ph $2.50. PB 98773

Climatic tests were conducted on synthetic-resin glues. Spliced samples of pine glued with Polystal, AS-glue, Pressal, P-600 and Pertunol were exposed to the weather for 1, 2, 4 and 6 months, and then tested for bonding strength in the dry, wet and redried condition. Results indicate that no impairment of the wood structure resulted from chemical action of the glues nor a decrease in strength from exposure to the weather. ZWB UM 1225, trans. AAF T-2 T/6393. Report no. K20/48ZB.

DETERMINATION OF THE RESTING TIME OF SYNTHETIC RESIN GLUES BY VISCOSITY MEASUREMENTS, by K. Berger and W. Küch. Germany. Zentrale für Wissenschaftliches Berichtswesen der Luftfahrtforschung. Nov 1943. 14f photo, graphs, table Mi $1.75, Enl Pr $3.75. PB 100309

1. Glue, Resin - Durability 2. Glue, Resin - Strength - Germany 3. Resins, Synthetic - Germany 4. Kaurit (Trade name) 5. ZWB UM 1120 6. Micro BIOS FD 5082/47, Frames 1-14.

Translated by Gt. Brit. Ministry of Supply. For American translation see PB 42297. Abstract available as PB 100309s. 2p. Mi $1.25, Ph $1.25.

DICHTWERKSTOFFE. (SEALING MATERIAL), by Hermann Hemesath. Bayerische Motoren Werke A. G. Flugmotorenbau G.m.b.H., Entwicklungswerk, Spandau, Ger. May 1943. 3p Mi $1.25, Ph $1.25. PB 98866

The physical properties of Lupolen H, a gasket material resistant to HNO_3, H_2SO_4, and HC1 are investigated. The material is a highly polymerized hydrocarbon to be used in conjunction with corrosive propellant systems. Outstanding properties besides chemical inertness are good low-temperature resistance and small dielectric loss factor. Report BMW/R-NDS-237/43. BMW 4144. AAF T-2 T/3019.

EVALUATION OF ADHESION OF ORGANIC COATINGS TO METAL SURFACE BY ULTRASONIC VIBRATIONS, by Saul Moses. U. S. Naval Research Laboratory,

Bellevue, D. C. May 1948. 37p photos, graphs, tables Mi $2.25, Ph $5.00 Mimeo: $1.00. PB 99969

A direct, quantitative method for measuring adhesion of organic coatings to both metal and non-metal substrata utilizing an electrodynamic system for producing longitudinal ultrasonic vibrations in a metal cylinder. An organic film attached to the free end of the vibrating cylinder separates from the metal when the force due to acceleration exceeds the adhesion force at the interface. NRL C-3286.

INTEGRAL FUEL TANK SEALING COMPOUNDS: LABORATORY TESTING AND SERVICE PERFORMANCE, by F. A. Catroppa. U. S. Naval Air Material Center. Aeronautical Materials Laboratory, Philadelphia, Pa. Aug 1948. 23p photos, graph, tables Mi $2.00, Ph $3.75. PB 98946

An investigation was conducted to establish simulated service tests of integral fuel tank sealing compounds and, on the basis of data obtained, to test the sealants in present use. The test data obtained indicate that the performance tests are reliable in determining the effectiveness of fuel tank sealants but it is believed that tests conducted on smaller tanks than those used here would be equally effective and the smaller tanks would take considerably less time to manufacture and seal. NAM AML 254702, Part III.

Chemical Engineering and Equipment

AUFSTELLUNG EINER APPARATUR NACH PR. 2892 (SETTING UP AN APPARATUS ACCORDING TO PR. 2892). I. G. Farbenindustrie A. G., Frankfurt am Main, Ger. Oct 1945. 55f drawings only Mi $2.75, Enl Pr $8.75. PB 100071

1. Chemical engineering - Germany 2. Micro BIOS FD 173/50, Frames 1-18.

Reel consists of 18 drawings, numbered 63245A, 63103A, 5888A, etc.

NAPHTLALIN SILO UND SCHMELZAPPARATUR (NAPHTHALIN STORAGE AND VAPORIZING APPARATUS). I. G. Farbenindustrie A. G., Uerdingen, Ger. Jul 1946. 24f drawings only (Legends in German and English) Mi $2.00, Enl Pr $5.00. PB 100315

1. Naphthalene - Melting - Germany 2. Naphthalene - Production - Germany 3. Naphthalene - Storage - Germany 4. BIOS FR 1597 LD 5. Micro BIOS/DOCS 247/1173/UE 1-5 6. Micro BIOS FD 4731/47, Frames 1-5.

Listed in BIOS FR 1597, appendix 7.

PRODUCTION OF ACETYLENE, BENZENE, STYRENE, ETC.; DESCRIPTION OF PLANT AND PROCESSES. Chemische Werke Hüls G.m.b.H., Marl, Ger. 1945-1946. 72f drawings (Text in German) Mi $3.50, Enl Pr $11.25. PB 100338

1. Acetylene - Production - Germany 2. Benzene - Production - Germany 3. Styrene - Production - Germany 4. Glycol - Production - Germany 5. Chlorine - Electrolysis - Germany 6. Methanol - Synthesis - Germany 7. Polystyrol EF (Trade name) 8. Polystyrol III (Trade name) 9. Polystyrol IV (Trade name) 10. Micro BIOS FD 4636/47, Frames 1-69.

English abstract included. Abstract available as PB 100338s. 2p. Mi $1.25, Ph $1.25.

PRODUCTION OF TETRACHLOROETHANE AND TRICHLOROETHYLENE. I. G. Farbenindustrie A. G., Schkopau, Ger. 1939-1944. 101f drawings, diagrs (Text in German) Mi $4.50, Enl Pr $15.00. PB 100339

1. Ethane, Tetrachloro - Production - Germany 2. Ethane, Trichloro - Production - Germany 3. Patents - Germany O.Z. 12661 Mar 21, 1941 4. Micro BIOS FD 2666/47, Frames 1-100.

English abstract included. Abstract available as PB 100339s. 1p. Mi $1.25, Ph $1.25.

SCHEMA DER PH-ANLAGE (DRAWINGS OF PHTHALIC ANHYDRIDE PLANT INSTALLATIONS). Herberts, Kurt & Co., Wuppertal, Ger. n.d. 26f drawings only Mi $2.00, Enl Pr $5.00. PB 100317

1. Phthalic anhydride - Production - Germany 2. BIOS FR 1597 LD 3. BIOS/DOCS/2471/1141/W10-13 4. Micro BIOS FD 4732/47.

Legends in German. Listed in BIOS FR 1597 Appendix 8, p. 60 (PB 87906).

Miscellaneous Chemicals

DEVELOPMENT OF OXYGEN-CARRIERS. MONTHLY REPORT XII, FEB-MAR 1942, by Harvey Diehl. U. S. Office of Scientific Research and Development. Mar 1942. 5p Mi $1.25, Ph $1.25. PB 98624

A study was made of the oxygen-carrying capacity of disalicylalethylenedimine cobalt in chloroform solution. Further studies were made on the preparation of disalicylalpropylenedimine; various modifications of the preparation, including the pyridine method, were tried. Further consideration was given to the proposal to prove the existence of water in the parent oxygen-carrying compound by the use of radioactive water. Construction was continued on the differential manometric apparatus. Attempts were made to improve the yield of the Reimer-Tiemann reaction. Considerable attention was devoted to the nitration of salicylaldehyde.

DIMETHYLANILIN ALS ABSORPTIONSFLÜSSIGKEIT FÜR SCHWEFELDIOXYD (ABSORPTION OF SULPHUR DIOXIDE) von Dr. Max Wohlwill. Metallgesellschaft A. G., Frankfurt am Main, Ger. Apr-Jun 1938. 43f graphs, table (Text in German) Mi $2.50, Enl Pr $7.50. PB 100254

1. Sulfur dioxide - Absorption - Germany 2. Micro BIOS HEC 12074 3. Micro BIOS HEC 12076 4. Micro BIOS HEC 12078 5. Micro BIOS HEC 12077 6. Micro BIOS FD 4867/47, Frames 1-42.

Abstract available as PB 100254s. 2p. Mi $1.25, Ph $1.25.

FREE HYDRAZINE I, BY LOBRY DE BRUYN, TRANSLATED BY JOHN D. BENNETT, M. W. KELLOGG CO. Jun 1896. 8p Mi $1.25, Ph $1.25. PB 98780

This report presents studies of the preparation of and a few properties of free hydrazine. Free hydrazine can be prepared by two different methods: by the decomposition of the salt, Az_2H_4 HC1, dissolved in methyl alcohol by means of an equivalent quantity of sodium methylate (in a medium of free water) and subsequent distilling of the alcohol, and by dehydrating the hydrate of hydrazine with the aid of barium oxide. Original document (in French) not available.

INFRARED AND RAMAN SPECTRA OF CARBONYL FLUORIDE, by Patricia J. H. Woltz and E. A. Jones. U. S. Atomic Energy Commission, Oak Ridge, Tenn. Jan 1949. 2p table Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100176

Preliminary results of measurements of the Raman spectrum of liquid F_2CO and

the infrared absorption spectrum of the gas in the 2 to 25 μ region. Manuscript has been submitted to the Journal of Chemical Physics for possible publication. MDDC KLI 116. AECD 2481.

INTENSITIES OF ELECTRONIC TRANSITIONS IN ALIPHATIC KETONES IN THE VACUUM ULTRAVIOLET, by Robert S. Holdsworth. 1947. 44p. Mi $2.50, Ph $6.25. PB 98181

The absolute intensities of the electronic transitions at 51,000 cm^{-1} and 60,000 cm^{-1} have been determined for methyl ethyl ketone, methyl isopropyl ketone, methyl tertiary butyl ketone, diethyl ketone, diisopropyl ketone, and ditertiary butyl ketone. Submitted as a report on the Navy contract N6 onr-241 task order I to the University of Rochester.

KONTINUIERLICHE SULFOCHLORIERUNG VON MEPASIN ZU MERSOL H (CONTINUOUS SULFOCHLORINATION OF MEPASIN TO MERSOL H). I. G. Farbenindustrie A. G., Frankfurt am Main, Ger. Mar 1941. 52p drawings (Text in German) Mi $2.75, Ph $7.50. PB 100046

1. Mepasin (Emulsifying agent) 2. Mersol H (Trade name) 3. Hydrocarbons - Sulfochlorination - Germany 4. Mepasin sulfochloride - Germany.

Drawings will not reproduce well.

MANUFACTURE OF OXYGEN BY USE OF REGENERATIVE CHEMICALS TO DECEMBER 1941, by Melvin Calvin. California. University. Dept. of Chemistry. Dec 1941. 28p drawings Mi $2.00, Ph $3.75. PB 98745

An improved method for the manufacture of active cobalt salicylaldehyde ethylenediamine is described, and an apparatus is recommended for recovering O_2 from the air using this active material. Copper tubes, packed with the absorptive material, are jacketed to permit the use of cooling water on the outside of the tubes during absorption and of steam during desorption. Absorption is at a pressure of 80-100 psi and 100°C, and desorption is at atmospheric pressure and temperature of tap water. OSRD 403.

OXYGEN PROBLEM. REPORT XXI. REPORT NO. 17 TO N.D.R.C. WORK FROM FEB 20, 1942 TO MAR 2, 1942, by James Head, Clifford Hach, Harvey Diehl. Iowa State College, Ames, Ia. GEM sr-215. May 1942. 23p Mi $2.00, Ph $3.75. PB 98733

Of the compounds investigated propylenediamine, phenylenediamine, decamethylenediamine, hexamethylenediamine, nonamethylenediamine, and benzidine have been satisfactory.

OXYGEN PROBLEM. REPORT XXIV. REPORT NO. 20 TO N.D.R.C. WORK FROM JAN 24, 1942 TO APR 29, 1942, BY GEORGE HARRISON AND HARVEY DIEHL, IOWA STATE COLLEGE, AMES, IA. CONTRACT GEM SR-215. Jul 1942. 32p Mi $2.25, Ph $5.00. PB 98622

The reaction of cobalt chloride and disalicylalethylenediimine under anhydrous conditions is studied. It was noticed that in the formation of the oxygen-carrying compound by the Harrison-Hach method there is formed an orange precipitate which is quickly converted to the oxygen-carrying compound or covered up by it. This orange precipitate is not obtained by several methods of preparation. The method of attack was to eliminate water by working under anhydrous conditions.

OXYGEN PROBLEM. REPORT XXXV. REPORT NO. 31 TO N.D.R.C. WORK FROM JUN 1, 1942 TO JUL 25, 1942 BY R. W. SCHWANDT AND HARVEY DIEHL, IOWA STATE COLLEGE, AMES, IA., CONTRACT OEM SR-215. Aug 1942. 10p Mi $1.25, Ph $1.25. PB 98703

The identity and purity of Tetramethylendiamine was checked. The condensation of the tetramethylenediamine and salicylaldehyde was effected and the product, disalicylaltetramethylethylenediimine, characterized. The condensation of tetramethylethylenediamine and 2-hydroxy-3-methoxybenzaldehyde was effected and the product di-(2-hydroxy-3-methoxybenzal) tetramethylethylenediimine was characterized. The condensation of tetramethylethylenediamine and 2-hydroxy-3-nitrobenzaldehyde was effected and the product characterized. The cobalt derivatives of all three condensation products were prepared. It was concluded that oxygen-carrying properties of disalicylalethylenediimine cobalt is destroyed when other diamines are substituted for the ethylenediamine.

OXYGEN PROBLEM. REPORT XXXVIII. REPORT NO. 34 TO N.D.R.C. WORK FROM MAY 13, 1942 TO JUL 24, 1942, BY LAWRENCE LIGGETT, JAMES HEAD, AND HARVEY DIEHL, AND BY CALVIN AND COWORKERS. IOWA STATE COLLEGE, AMES, IA. Jul 1942. 32p tables Mi $2.25, Ph $5.00. PB 98621

The known methods of preparing di-(2-hydroxy-3-methoxybenzal) ethylenediimine cobalt (Co-Ox M) are studied and modified. The prior preparation of the condensation product, its solution in alkali, and conversion to the cobalt compound in a dilute alcohol medium appeared to be the most desirable procedure. Apparatus for the manufacture of 30 pounds per day of the compound was assembled and the recommended procedure tested. It was shown that both the deoxygenated and the oxygenated forms of the di-(2-hydroxy-3-methoxybenzal) ethylenediimine cobalt are very hydroscopic.

OXYGEN PROBLEM. REPORT XLV, WORK FROM JUL 11, 1942 TO AUG 24, 1942, BY LAWRENCE LIGGETT AND HARVEY DIEHL, IOWA STATE COLLEGE, AMES, IA., CONTRACT NO. OEM SR-215. Sep 1942. 14p Mi $1.75, Ph $2.50. PB 98697

The results of various oxygen problem experiments are shown. Di-(salicylal) methylenediamine and its cobalt derivative were prepared. The cobalt compound was prepared. The compound 2-hydroxy-3-nitro-5-methylbenzaldehyde in glacial acetic acid was condensed with ethylenediamine. Formyl camphor was condensed with o-phenylenediamine. Two samples of Co-Ox M were analyzed for oxygen and moisture content.

PHTALSÄURE (PHTHALIC ACID). I. G. Farbenindustrie A. G., Ludwigshafen, Ger. n.d. 36f drawings only (Legends in German) Mi $2.25, Enl Pr $6.25. PB 100316

1. Phthalic acid - Production - Germany 2. BIOS FR 1597 LD 3. Micro BIOS FD 4730/47, Frames 1-9.

Will not reproduce well. Listed in BIOS FR 1597, appendix 6.

PRODUCTION OF LIQUID OXYGEN, BY BARNET F. DODGE AND HARDING BLISS. YALE UNIVERSITY, NEW HAVEN, CONN. SECOND PROGRESS REPORT. Aug 1941. 62p diagrs, tables Mi $3.00, Ph $8.75. PB 98604

The purpose of the report was to give results on the analysis of additional processes for liquid oxygen production, to present some additional data on equipment used in air separation, to give preliminary results of a study of processes and plant for the production of oxygen on board a submarine, and to add some further information

on portable plants and some miscellaneous information pertinent to the liquid oxygen problem as a whole. No attempt was made to present detailed results. A summary of results that seemed most pertinent is given along with some appropriate explanation and interpretation.

PRODUCTION OF SULPHURIC ACID BY WET CATALYSIS. Metallgesellschaft A.G., Frankfurt am Main, Ger. Jun 1934-Dec 1937. 48f tables (Text in German) Mi $2.50, Enl Pr $7.50. PB 100255

1. Catalysis - Methods - Germany 2. Sulfuric acid - Production - Germany 3. Micro BIOS HEC 12049 4. Micro BIOS HEC 12062 5. Micro BIOS HEC 12057 6. BIOS FR 335 LD 7. Micro BIOS FD 4849/47, Frames 1-47.

Listed on p. 188-199 of BIOS FR 335. Abstract available as PB 100255s. 2p. Mi $1.25, Ph $1.25.

THE REACTION OF SUCCINYL CHLORIDE WITH GRIGNARD REAGENTS, by C. Stübe. 1947. 34p illus Mi $2.25, Ph $5.00. PB 98189

Investigations were conducted to determine the reaction of Grignard reagents with di-acid halides and to determine the relation of the reaction to other carbonyl compounds. Reaction tests were run varying in the time of reaction, the molar ration, and using various hydrolysis methods. The reactions gave much better yields probably because of the size of the aromatic groups and of the reduction in vigor of the reaction.

REDUCTION OF CARBON DIOXIDE TO FORMIC ACID, by Weldon G. Brown and John G. Burr, Jr. U. S. Atomic Energy Commission. Oak Ridge National Laboratory. Feb 1949. 4p Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100178

Discusses mechanism of reaction and describes experimental details in which CO_2 reacts with ethereal lithium borohydride solution and the reaction product is hydrolyzed with dilute phosphoric acid; the aqueous formic acid produced is distilled under vacuum; reaction yields given. AECD 2482.

ÜBER ÄTHER HOHER CETANZAHL (ETHERS OF HIGH CETANE NUMBERS). I. G. Farbenindustrie A. G., Ludwigshafen, Ger. 1943. 18f graphs, tables (Text in German) Mi $1.75, Enl Pr $3.75. PB 100260

1. Ethers - Germany 2. Sulfides - Germany 3. Acids, Carboxylic - Derivatives - Germany 4. Micro BIOS FD 2866/46, Item 69, Frames 9521-9538.

Technische prüfstande Oppau. Bericht no. 544. Abstract available as PB 100260s. 1p. Mi $1.25, Ph $1.25.

VERSUCHE UEBER 1,3 PROPYLENOXYD AND 1,3 BUTYLENEXYD. (REPORT ON 1,3-PROPYLENOXYD UND 1,3 BUTYLENEXYD). I. G. Farbenindustrie A. G., Ludwigshafen, Ger. Apr 1940. 24p drawings, graphs (Text in German and English) Mi $2.00, Ph $3.75. PB 98606

The 1.3-oxides of propylene and butylene were synthesized. The reactions of these oxides towards catalysts of different acidities at different temperatures were analyzed. This report will not reproduce well. AAF T-2 T/1576.

VERSUCHE ZUR KONTINUIERLICHEN GEWINNUNG VON METHYLADIPINSÄURE UND DEREN VERESTERUNG MIT LEUNA-ALKOHOL 180-250°. (CONTINUOUS METHOD OF PREPARING METHYL ADIPIC ACID AND ITS ESTERIFICATION

WITH HIGH MOLECULAR ALCOHOL), by Wulff Ströbele. Buna-Werke G.m.b.H., Schkopau, Ger. Sep 1944. 17p diagrs, graph, table Mi $1.75, Ph $2.50. PB 98731
Description is given of equipment used for the preparation of methyl adipic acid by oxidation of methylcyclohexanone and the esterification of methyl adipic acid with high molecular alcohol. AAF T-2 T/1513.

ELECTRICAL MACHINERY, EQUIPMENT AND SUPPLIES

Communication Equipment

CONSTRUCTION OF A MINIATURE FILAMENTARY TYPE RF POWER AMPLIFIER PENTODE DT-275, BY R. MORGAN. TUNG-SOL LAMP WORKS, INC., Bloomfield, N. J. FINAL REPORT. Dec 1948. 74p photos, drawings, graphs, tables Mi $3.50, Ph $10.00. PB 98302
1. Amplifiers, Radio Frequency (RF)

DEVELOPMENT OF REMOTE ANTENNA TUNING KIT MC-698, by D. W. Hunt. U.S. Camp Coles Signal Laboratory. Oct 1948. 79p photos, drawings, graphs, tables Mi $3.50, Ph $10.00. PB 100009
1. Antennas, Tuned 2. Antennas, Remote control 3. Kits, Radio antenna 4. MC-698 (Antenna tuning kit) 5. Title: Remote antenna tuning kit MC-698 6. SCEL ER E-1030.

DIVERSITY RECEPTION RESEARCH PROJECT, BY R. S. GLASGOW AND S. H. VAN WAMBECK. WASHINGTON UNIVERSITY. DEPT. OF ELECTRICAL ENGINEERING, ST. LOUIS, MO. FINAL REPORT, 1 AUG 1946-30 JUN 1949. 1949. 104p fold drawing, graphs, tables Mi $4.50, Ph $13.75. PB 99067
1. Radio receivers - Research.
Contract no. W 36-039 sc-32277. File No. 12297-PH-49-91. Department of the Army Project 3-99-12-022. Signal Corps Project 132B.

GLEICHSTROMVERSTÄRKER FÜR ELEKTRISCHE BETRIEBSKONTROLLGERÄTE. (AMPLIFIERS FOR ELECTRICAL CONTROLS), by A. Kuntze. 1943. 6f photos, diagrs (Text in German) Mi $1.25, Enl Pr $2.50 PB 100258
1. Amplifiers, Direct current - Germany 2. Joens, W. H. & Co., Düsseldorf, Ger. 3. Siemens & Halske A. G., Berlin 4. Micro BIOS DOCS 2411/1012/6 5. Micro BIOS FD 3046/47, Frames 1-6.
Sonderabdruck aus Chemische technik v. 16, no. 21, p. 213-218. Abstract available as PB 100258s. 1p. Mi $1.25, Ph $1.25.

HIGH FREQUENCY RADIO COMMUNICATION METHODS, BY MURRAY G. CROSBY. FINAL REPORT. Apr 1948. 55p photos, fold drawings, graphs Mi $2.75, Ph $7.50. PB 98358
1. Radio receivers - Patents - U. S. 2. Radio communication 3. High frequencies - Research.

INTERIM REPORT ON THE MEASUREMENT OF ATMOSPHERIC NOISE LEVEL, by H. A. Thomas and H. V. Cottony. U. S. National Bureau of Standards. Central Radio Propagation Laboratory. Jan 1947. 54p photos, diagrs, graphs, tables

Mi $2.75, Ph $7.50. PB 99002
1. Radio - Noise 2. Radio waves - Atmospheric effects 3. Atmosphere - Sound absorption 4. CRPL 5-1.

INVESTIGATION OF PHYSICAL CHARACTERISTICS OF 4-CHANNEL AND 12-CHANNEL CARRIER CABLE DESIGNS, by Lillian C. Platau and William W. Hyde. U. S. Camp Coles Signal Laboratory. Jun 1948. 44p photos, tables Mi $2.50, Ph $6.25. PB 100008
1. Communications, Carrier current 2. SCEL M-1159.
Proj 515A-1. Army Proj. 3-21-03-051. Proj 515B-1. Army Proj. 3-21-03-052.

LATERAL DEVIATION OF RADIO WAVES REFLECTED AT THE IONOSPHERE, by W. Ross. Gt. Brit. Dept. of Scientific and Industrial Research. Radio Research. 1949. 37p graphs, tables Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $.25. PB 100032
1. Radio waves - Meteorological effects - Gt. Brit. 2. Ionospheric measurements - Gt. Brit. 3. DSIR Rad R SR 19.

RESULTS OF INVESTIGATIONS DIRECTED TOWARD CONSTRUCTION OF FREQUENCY METERS WITH .001% ACCURACY IN FREQUENCY RANGES .1 TO 20 MEGACYCLES. Lavoie Laboratories, Morganville, N. J. Apr 1948. 109p photos, drawings Mi $4.50, Ph $13.75. PB 98301
1. Radio frequency power - Measurements

A STUDY OF THE RADIO-FREQUENCY RADIATION FROM THE SUN, by John P. Hagen. U. S. Naval Research Laboratory, Bellevue, D. C. Jul 1949. 125p photos, drawings, graphs, tables Mi $5.00, Ph $16.25. PB 100292
Report of investigation of radiation from the sun in the radio-frequency spectrum which is applicable to radio propagation and the nature of the sun. The monochromatic equivalent temperature of the quiet sun measured at radio wavelengths was found to vary between the limits of 6700 degrees K at 8 mm to 10^6 degrees K at 200 cm wavelength. The opacity of the solar atmosphere for the various radio wavelengths was computed, the coefficient of absorption being a function of electron density, wavelength, temperature, and refractive index of the gas. NRL R 3504.

Electronics

AN EVALUATION OF THE USE OF GROUND RADAR FOR AVOIDING SEVERE TURBULENCE ASSOCIATED WITH THUNDERSTORMS, by J. K. Thompson and V. W. Lipscomb. U. S. Langley Aeronautical Laboratory, Langley Field, Va. Oct 1949. 10p Mi $1.25, Ph $1.25. PB 98976
An analysis of data obtained indicates that the magnitude and intensity of gusts encountered in air-mass and frontal thunderstorms may be considerably reduced by avoiding storm areas indicated by ground radar of a 10-centimeter wavelength. The analysis also indicates that the ground radar used becomes more effective for turbulence avoidance as the flight altitude is increased up to 25,000 feet and is least effective at 6,000 feet. NACA TN 1960.

FREQUENCY AND BANDWITH TOLERANCES FOR A TRANSPONDOR GO-NO-GO WAVEMETER, by S. Paull. U. S. Naval Research Laboratory, Bellevue, D. C. Jun 1949. 32p graphs, table Mi $2.25, Ph $5.00. PB 99071

Consideration is given to the frequency and bandwidth tolerances of a wavemeter to be used as a part of a go-no-go transpondor transmitter tester in a pulse-operated interrogator-beacon system. It is shown that a statistical treatment of system frequency and bandwidth tolerances found in equipment specifications provides a method of designating suitable go-no-go wavemeter tolerances. NRL 3503.

MECHANISCHE GENAUIGKEITSMESSUNGEN ANSBACH S. (ACCURACY MEASUREMENTS ON RADAR SET ANSBACH S), by Dr. Noack. Leichtmetallbau G.m.b.H., Regansburg, Ger. Nov 1944. 153p diagrs, graphs, tables (Text in German and English) Mi $6.00, Ph $20.00. PB 99146

The best means of attaining accuracy with AA radar set Ansbach were determined. Criteria for construction and materials were established. Specifications for both navy and air force are given. The main concern of this analysis was the proper design and the operation of the turntable. AAF T-2 T/3434.

MODIFICATION OF RADAR TRAINING SET AN/UPT-T3, by John F. Dickson. U. S. Camp Evans Signal Laboratory, Belmar, N. J. May 1948. 11p drawings, graphs Mi $1.75, Ph $2.50. PB 99972

1. Radar - Training devices 2. AN/UPT-T3 (Radar training set) 3. SCEL TM M 1126.

PANTOGRAPH RADAR TRACKING: POINT CENTERING EXPERIMENTS, by Adelbert Ford, David Rigler, Genevieve E. Dugan. U. S. Air Materiel Command, Wright Field, Dayton, Ohio. Sep 1949. 37p graphs, tables Mi $2.25, Ph $5.00. PB 99996

To locate a signal on a scope area, a single point cursor was substituted for the crossed hairline technique and moved with degrees of freedom by a pantograph system of levers for some runs, and by a finger pushing technique for other runs. There was a tendency of operators to show systematic drifts in their centering standard, this proneness being reduced by requiring operators to work faster. AAF TR 5969.

PRÜFFELDVERSCHRIFTEN "NAXOS"; PRÜFFELDVERSCHRIFTEN "BERNHARDINE" (TESTING PROCEDURE FOR AIRBORNE RADIO SETS), by Behle. Telefunken Gesellschaft für Drahtlose Telegraphie m.b.H., Berlin. Aug 1944. 90p diagrs, graphs, tables (Text in German and English) Mi $3.75, Ph $11.25. PB 99156

Testing procedures are outlined for air-borne radio equipment. The visual indicator, SG 350 Zc, as part of the radio set, FuG 350 Zc, and serves for the visual indication of impulse-fed transmitters. A description of field of application, method of operation, and current supply are given. General instructions for inspection and electrical and operational tests are included. The testing procedure for the Naxos antenna is also outlined, and testing specifications are given for test oscillator Puck and motor generator Naxos Z. AAF T-2 T/2655.

RADIO AND RADAR IN AERONAUTICS, by Hireshi Seine. Jul 1941. 103p photos, diagrs, graphs (Text in Japanese) Mi $4.50, Ph $13.75. PB 99161

The development of aircraft and radio; the progress of aircraft and flight performances, both in military and commercial use; development of electrical equipment for aircraft; development of aircraft radio industry; and the purposes of the radio are discussed. The purpose of the antenna and the various types, is discussed. The general theory and purpose of the directional radio are given. The general prob-

lems of radio in aeronautics are explained, along with a discussion of electromagnetic wave propagation. An explanation is given of ground-to-air, plane-to-plane, and air-to-ground communication, and the importance of weather forecasting for flights. The various types of beacons, direction finders, blind landing systems, and homing devices are described. Abstract in English will not reproduce well.

REFLECTIONS FROM SMOOTH CURVED SURFACES, by R. C. Spencer. Massachusetts Institute of Technology, Cambridge, Mass. Radiation Laboratory. Jan 1945. 13p diagrs, graphs Mi $1.75, Ph $2.50. PB 99211

A mathematical analysis was made of the microwave back scattering cross section of smooth curved surfaces. The scattering cross sections for a torus of revolution, a paraboloid of revolution, and an ellipsoid of revolution are calculated, and are applicable to sections of curved water tanks, ship funnels, shells, airplane fuselages, blimps, and hangars. MIT Rad Lab 661.

SCHEMATIC MANUAL FOR SURPLUS ELECTRONIC EQUIPMENT, VOL II: A. M. RECEIVERS AND TRANSMITTERS. U. S. Office of Technical Services. 1949. 43p diagrs, (part fold), tables Mimeo: $1.00. PB 99539

1. Electronic equipment 2. Radio receivers 3. Radio transmitters

Vol I is PB 98487; vol III is PB 100043. The material in this manual has been extracted from various publications of the armed services.

SERVICES, FACILITIES AND MATERIALS TO DEVELOP SUBMINIATURE CLASS C RF POWER MIXER TUBE, by Eugene J. Hoffman. Final report. Jun 1948. 84p drawings, graphs Mi $3.75, Ph $11.25. PB 98356

1. Radio equipment - Tubes 2. Tubes, Electron 3. Wise, Roger M., Inc., Rockville Centre, N. Y. 4. U. S. Squier Signal Laboratory, Fort Monmouth, N. J.

SYNCHRONIZATION SYSTEM FOR GROUND RADAR RELAY, by J. M. Sturtevant and E. W. Samson. Massachusetts Institute of Technology. Radiation Laboratory. Jan 1946. 60p diagr Mi $2.75, Ph $7.50. PB 99139

Results are given of experimentation carried out in connection with the problem of synchronizing the indicators at the relay receiving station with those at the radar. The more important general considerations which arise in the point-to-point relay system are discussed. Tests showed appreciable losses of rotation, especially in the presence of interference. MIT Rad Lab 978.

THEORY OF METAL-PLATE PRISMS FOR MICROWAVES, by Wade Ellis. U. S. Air Force. Cambridge Research Laboratories, Cambridge, Mass. Nov 1949. 23p photos, diagrs, graphs Mi $2.00, Ph $3.75. PB 100019

The results of an analysis of metal-plate prisms are presented. In particular, analytic formulas are derived for the angle of deviation and the dispersion of normal and binormal prisms. Experimental data are included for both cases. AAF CRL E 5051.

Miscellaneous

BIBLIOGRAPHY OF BLACKOUT AND DIMOUT LIGHTING PRACTICES DURING WORLD WAR II, INCLUDING AN ENGINEERING DIGEST OF DEFENSE LIGHTING, by S. G. Hibben and others. Illuminating Engineering Society. Special Committee

on Wartime Lighting Practices during World War II. n.d. 49p tables Available from Illuminating Engineering Society, 51 Madison Ave., New York 10, N. Y. $1.00. PB 100293

1. Blackouts - Lights - Bibliography 2. Street lighting - Bibliography.

CONSTANT-POTENTIAL ANODIZATION OF LEAD IN SULFURIC ACID SOLUTIONS, by J. J. Lander. U. S. Naval Research Laboratory, Bellevue, D. C. Sep 1949. 29p diagrs, graphs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $.75. PB 100268

The rate of attack on pure lead, anodized at various constant potentials in sulfuric acid solutions, was studied. The PbO is attacked chemically by the electrolyte to form an outer layer of $PbSO_4$. At higher potentials, PbO_2 is formed as a protective film. The inflection in the curve for the constant current-potential anodization of lead corresponds to that calculated thermodynamically for PbO formation. NRL R 3549.

DEVELOPMENTS IN METHODS OF ELECTROSTATIC STORAGE, BY JOSEPH KELAR. ENGINEERING RESEARCH ASSOCIATES, INC., ST. PAUL, MINN. CONTRACT NOBSR-42001. Jul 1949. 13p diagrs Mi $1.75, Ph $2.50. PB 99487

1. Electrostatic cells 2. QK 244 (Tube).

DEVELOPMENT OF HARMONIC MODE CRYSTALS, BY J. M. WOLFSKILL, R. T. SCHLAUDECKER, J. K. STERRETT AND H. C. PERRY. BLILEY ELECTRIC CO., ERIE, PENN. FINAL REPORT BEFORE REVISION. Jun 1947. 44p photos, drawings Mi $2.50, Ph $6.25. PB 98307

1. Crystals, Quartz.

For revision see PB 98307r.

DEVELOPMENT OF PLASTIC PULSE CABLES. FINAL ENGINEERING REPORT, by P. F. Durst and others. Jan-Apr 1949. 57p photos, drawings, graphs, tables Mi $2.75, Ph $7.50. PB 98355

1. Cables, Plastic insulated 2. Plastics, Polyethylene.

DRY DISC RECTIFIER CONTRACT. PROJECT ENGINEER, LLOYD W. MORRIS WITH R. E. COVINGTON AND S. C. HYMAN OF THE WAR DEPT. PHILADELPHIA SIGNAL CORPS PROCUREMENT DISTRICT. LOUISIANA STATE UNIVERSITY. 1ST ANNUAL REPORT FROM JUL 1946-JUL 1947. n.d. 42p photos, drawings, graphs, tables Mi $2.50, Ph $6.25. PB 98305

1. Rectifiers, Dry.

For 2nd report see PB 98306.

DRY DISC RECTIFIER CONTRACT. PROJECT ENGINEER, LLOYD W. MORRIS WITH R. E. COVINGTON AND S. C. HYMAN OF THE WAR DEPT. PHILADELPHIA SIGNAL CORPS PROCUREMENT DISTRICT. LOUISIANA STATE UNIVERSITY. 2ND ANNUAL REPORT FROM JUL 1947-JUL 1948. n.d. 55p diagr, graphs Mi $2.75, Ph $7.50. PB 98306

1. Rectifiers, Dry.

For 1st report see PB 98305.

INVESTIGATION OF THE PROPERTIES OF HIGH VALUED RESISTORS AND METHODS OF REDUCING SURFACE LEAKAGE, by Nancy F. Wood. U. S. Atomic Energy

Commission. Argonne National Laboratory. Jan 1944. 10p drawings, graphs, tables Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100160

Test procedures and results for investigation of effects of continuous current, polarization, and varying conditions of temperature and humidity on the value of Victoreen resistors of the order of 10^8 to 10^{11} ohms; effect of varnish in reducing surface leakage of the resistors was investigated. AECD 2355. MDDC CP 1223.

PHYSICAL PROPERTIES OF ARCS IN CIRCUIT BREAKERS, by Emil Alm. 1949. 250p photos, drawings, graphs Mi $9.00, Ph $31.25. PB 100005

A general classification of electrical apparatus, with particular reference to devices for making and breaking electric circuits is followed by a treatise on the fundamentals of the theory of gaseous discharges, and a survey, mainly qualitative, of the problems arising with the interruption of direct current and alternating current circuits. The two concluding chapters deal with high breaking capacity fuses and with switchgear making use of gases liberated from adjacent solid materials as extinguishing medium. Acta Polytechnica 47, 1949. Electrical engineering series, v. 2, no. 6. Also Kungl. Tekniska Högskolans Handlingar nr. 25.

RESEARCH PROJECT ON HIGH FREQUENCY PIEZO QUARTZ PLATES, BY AUGUST E. MILLER, LABORATORIES, NORTH BERGEN, N. J. FINAL REPORT. May 1948. 101p drawings, graphs, tables Mi $4.50, Ph $13.75. PB 98303

1. Crystals, Piezoelectric.

RESISTORS, ACCURATE, FIXED, NON-WIRE-WOUND, BY JOSEPH W. JIRA. CONTINENTAL CARBON, INC., CLEVELAND, OHIO. QUARTERLY PROGRESS REPORT NO. 4, AND FINAL PROGRESS REPORT. Sep 1949. 15p drawings, graphs, tables Mi $1.75, Ph $2.50. PB 99880

1. Resistors, Non-wire-wound.

Dept. of the Army project 3-26-00-600. Signal Corps Project 2006. Signal Corps Specification SCL-3086-A.

THREE CONTACT HIGH CURRENT CONNECTORS, BY J. H. SCHAEFER. FINAL REPORT. Apr 1949. 72p fold drawings Mi $3.50, Ph $10.00. PB 98357

1. Convertors, Electric 2. Currents, Electric - High voltage 3. U. S. Squier Signal Laboratory, Fort Monmouth, N. J.

FOOD AND KINDRED PRODUCTS

EFFECT OF FOOD AND ENVIRONMENT ON FOOD INTAKE, BY JOHN A. BROBECK, JACK L. STROMINGER AND RUTH LEYENDECKER. U. S. QUARTERMASTER FOOD AND CONTAINER INSTITUTE. OCT 1, 1945-JUN 30, 1949. Jun 1949. 4p Mi $1.25, Ph $1.25. PB 99633

1. Food - Preparation 2. Digestion - Effects of environment 3. QMC FCI Contract W-11-183-qm-5802 Rept. 11.

FAT DETERIORATION IN WHEAT FLOUR AND PREPARED MIXES IN RELATION TO THEIR PERFORMANCE VALUE, BY W. F. GEDDES, N. CEAGLSKE, S. M. BARER AND R. S. BRYANT. U. S. QUARTERMASTER FOOD AND CONTAINER

INSTITUTE. OCTOBER 1, 1948 TO JUNE 30, 1949. Jun 1949. 2p Mi $1.25, Ph $1.25. PB 99700
1. Flour, Wheat - Fat deterioration 2. QMC FCI Contract W-11-183-qm-5803 Rept. 9.

PEPPER AND PEPPER SUBSTITUTES; LIST OF REFERENCES, COMPILED by Francis D. Horigan and Cary R. Sage. U. S. Office of the Quartermaster General. Military Planning Division. Research and Development Laboratories. Technical Library. Feb 1950. 35p Mimeo: $1.00. PB 100356
1. Pepper - Bibliography 2. Pepper - Substitutes - Bibliography 3. QMC TL BS 11.

STUDY OF APPETITE DEPRESSANTS IN RELATION TO RATION ACCEPTABILITY, BY T. F. ZUCKER, L. M. ZUCKER, FRIEDA OSSERMAN AND ELIZABETH A. HOLMGREN. COLUMBIA UNIVERSITY. COLLEGE OF PHYSICIANS AND SURGEONS. DEPT. OF PATHOLOGY. REPORT NO. 7 ON CONTRACT W44-109-QM-1005 FOR PERIOD OCT 1945-SEP 1948. Sep 1948. 42p graphs, tables Mi $2.50, Ph $6.25. PB 100126
The report is divided into two phases: Phase I. Gastric emptying in the rat as affected by gossypol Phase II. Weight depressing and other systemic effect of gossypol. A discussion and summary is given following the report of each phase, also, a bibliography, tables and graphs.

TEA IN JAPAN, by Warren H. Leonard and Raymond Roberts. Supreme Commander for the Allied Powers. Natural Resources Section. Dec 1949. 62p photos, tables Mi $3.00, Ph $8.75. PB 100021
A botanical description of the tea plant, ecological factors, tea culture, insect pests and diseases, manufacture of crude teas, packaging, research experimentation together with a brief history of tea in Japan is given. SCAP NRS 125.

TESTING OF EGGS FOR QUALITY. Gt. Brit. Ministry of Food. 1949. 21p photos, tables Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $.30 PB 100024
Since producers are paid on a quality basis it is desirable that they should know something of the process of candling, the grading standards used, and the information that can be gained about the cause of the defects. This leaflet has therefore been prepared, not only as guide to candlers, but also for the information of procedures generally in order that unnecessary losses may be avoided.

YEAST FROM FLORIDA SULFITE WASTE LIQUOR, by Robert D. Walker, Jr. Florida. University. College of Engineering. Engineering and Industrial Experiment Station, Gainesville, Fla. Sep 1947. 10p Available from the Florida Engineering and Industrial Experiment Station, College of Engineering, Univ. of Florida, Gainesville, Fla., Ralph A. Morgen, Director. PB 100017
From the experiments reported in this paper it appears that yeast can be produced from Florida sulfite waste liquor in good yield and with consequent reduction of the pollutional character of the waste liquor. In such a manner the wastage of the state's natural resources may be materially reduced while at the same time providing a high protein feed for use in the cattle industry. Technical paper no. 16.

UELS AND LUBRICANTS

ADDITION OF ESTERS, ACIDS, AND SOAPS TO LUBRICATING OILS, AND PROPOSED RELATIVE PATENT APPLICATIONS. Ruhrchemie A. G., Oberhausen, Ger. Jul 1943. 4f (Text in German) Mi $1.25, Enl Pr $2.50. PB 100074
1. Lubricating oils - Additives - Germany 2. Lubricating oils - Patents - Germany 3. E1 (Ester oil) 4. Micro BIOS FD 900/48, Frames 1-3.
English abstract included. Abstract available as PB 100074s. 1p. Mi $1.25, Ph $1.25. Tables and graphs referred to are not included.

BEHAVIOR OF NORMAL H_2O_2, SPECIAL H_2O_2 AND SODIUM PERMANGANATE AT LOW TEMPERATURES, by Steindel. Germany. Luftfahrtforschungsanstalt, Peenemünde, Ger. Dec 1942. 23p graphs, tables Mi $2.00, Ph $3.75. PB 98493
The behavior of normal H_2O_2, special H_2O_2, and sodium permanganate at low temperatures was investigated. Laboratory experiments were carried out in a cold room which had been precooled for 2 days at -35°. Upon termination of the tests the following results were observed: Normal H_2O_2 at the usual concentrations of 85 and 80 percent has a freezing point of -20°C and -28°C, respectively; special H_2O_2 has a freezing point of -16°C for 85 percent concentration and -23°C for 80 percent concentration; sodium permanganate C 1.4 begins crystalize temperatures of -16° to -17°C. German title: Verhalten von T-, Ts-und Z-stoff C bei tiefen temperaturen. Translation by Buffalo Electro-Chemical Co., Inc., Buffalo, N. Y.

COMPARATIVE FOAMING CHARACTERISTICS OF AERONAUTICAL LUBRICATING OILS, by W. W. Woods and J. V. Robinson. Stanford University, Stanford, Calif. Feb 1950. 18p drawing, graphs, tables Mi $1.75, Ph $2.50. PB 100012
Comparative data are presented on the volume of foam and the stability of foams of aeronautical lubricating oils (new and used) produced at 100°C (212°F) by the air-bubbling method. An empirical expression has been developed by which the rate of foam rise may be predicted from a known rate of aeration, by making use of two parameters characteristic of the oil. NACA TN 2031.

DETONATION FLIGHT TEST PROGRAM, PHILLIPS PETROLEUM CO., BARTLESVILLE, OKLA. RESEARCH DEPT. TWELFTH BI-WEEKLY PROGRESS REPORT, CONTRACT W-33-038 AC 4606. Oct 1945. 49p tables Mi $2.50, Ph $6.25. PB 98728
Eleven flight tests were performed to run trace knock curves on various fuels for the determination of detonation and preignition characteristics and for an investigation of the effect of the boiling range of the high and low antiknock materials in aviation fuel distillation. Temperature data sheets are added for the various fuels. The trace knock curves were run under standard as well as miscellaneous conditions. The results of all flight tests with the various fuels are briefly discussed, and plotted in appended tables and graphs.

ENGINE OIL DILUTION STANDARDS, by Joseph Gilbert. U. S. Air Materiel Command, Wright Patterson Air Force Base, Dayton, Ohio. Engineering Div., Materials Laboratory. Dec 1946. 11p graphs, tables Mi $1.75, Ph $2.50. PB 98495
Suitable standards for use in determining the viscosities of engine oils of unknown

dilution in a "falling ball" type viscosimeter were prepared. A comparison was made of the effects on diluted oil viscosities by Stoddard solvent to a typical Spec. AN-F-28 fuel. The final compositions of the simulated standard samples are tabulated and viscosity curves are plotted for all samples. AAF TSEAM MR M5296.

ESTIMATION OF F-3 AND F-4 KNOCK-LIMITED PERFORMANCE RATINGS FOR TERNARY AND QUATERNARY BLENDS CONTAINING TRIPTANE OR OTHER HIGH-ANTIKNOCK AVIATION-FUEL BLENDING AGENTS, by Henry C. Barnett. U. S. Aircraft Engine Research Laboratory, Cleveland, Ohio. 1948. 28p graphs, tables Available from Supt. of Documents, U. S. Government Printing Office, Washington 25, D. C. $.20. PB 100039

Charts are presented that permit the estimation of F-3 and F-4 knock limited performance ratings for certain ternary and quarternary blends. Because of the unusual behavior of some of the aromatic blends in the F-3 engine, the charts for aromatic-paraffinic blends are probably less accurate than the charts for purely paraffinic blends. NACA 904.

FILTRATION ACCELERATORS IN THE DEWAXING OF OILS. Rhenania-Ossag Mineralölwerke A. G., Hamburg, Ger. 1941. 15f diagrs, graphs, tables Mi $1.75, Enl Pr $3.75. PB 100051

1. Oils - Dewaxing 2. Accelerators, Filtration 3. Micro BIOS FD 2874/46, Frames 785-798.

Report no. 8. Included English abstract. Abstract available as PB 100051s. 1p. Mi $1.25, Ph $1.25.

GASES, SEPARATION BY CENTRIFUGING, by Harry A. Pearl. Sep 1946. 4p Mi $1.25, Ph $1.25. PB 98353

1. Gases - Fractionation 2. Centrifuges 3. AAF TSEAM MR M5278.

GASWÄRME, RECHNERISCHE UNTERLAGEN IHRER VERWENDUNG IN INDUSTRIE UND GEWERBE (GAS HEAT; CALCULATIONS FOR ITS USE IN WORKSHOP AND INDUSTRY), by Dr. Georg Wagener. Gaswärme Institut, Essen, Ger. 1943. 251f (Text in German) Mi $9.00, Enl Pr $35.00. PB 100072

1. Gas, Industrial - Germany 2. Heating, Industrial - Germany 3. Micro BIOS FD 685/48, Frames 1-248.

English abstract included. Abstract available as PB 100072s. 1p. Mi $1.25, Ph $1.25. Listed on p. 52 of BIOS FR 1800.

GREASE STABILITY, PT. III: EVAPORATION TEST METHOD, by Marina Madden. U. S. Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio. Engineering Div. Materials Laboratory. Sep 1945. 17p diagrs, tables Mi $1.75, Ph $2.50. PB 98499

An investigation was made to determine a laboratory test method, that will better predict the evaporation tendencies of greases and will give more reproducible laboratory results. A new apparatus called the CLR evaporation test cell, was designed to better control the factors that effect evaporation. Complete results of the investigations are discussed and tabulated. AAF TSEAM MR M4888.

INFORMATION ON THE RELATION BETWEEN THE STORAGE SPACE IN CYLINDERS AT HIGH PRESSURE AND THE VOLUME OF FREE HYDROGEN, by S. W. Stratton. U. S. National Bureau of Standards. Jun 1947. 3p Mi $1.25, Ph $1.25. PB 98792

The space occupied by free hydrogen at pressures of 1 atm, 1000, 1500, 1800, and 2000 lb is given in cu ft. Examples are given illustrating the use of these data to compute the space occupied at these pressures by any volume. The figures are for uniform temperatures.

KNOCK TESTS ON SYNTHETIC FUELS. Ruhrchemie A. G., Holten, Ger. Aug 1943-Mar 1944. 102f graphs, tables (Text in German) Mi $4.50, Ph $15.00. PB 100259
1. Fuels, Synthetic - Knocking - Germany 2. Steinkohlen Bergwerk Rheinpreussen G.m.b.H., Homberg, Ger. 3. Micro BIOS FD 2877/46, Item 28, Frames 1-101.
Abstract available as PB 100259s. 2p. Mi $1.25, Ph $1.25.

LUBRICATING OIL ADDITIVES. Daimler-Benz A. G., Stuttgart, Ger. 1944. 11f diagr, tables (Text in German) Mi $1.75, Enl Pr $3.75. PB 100052
1. J6 (J.G. 1586) Lubrication oil additive) 2. DB 605 (Engine) 3. 891 (Lubricating oil additive) 4. Lubricating oils - Additives - Germany 5. Micro BIOS FD 2872/46, Item 39, Frames 10728-10736.
Reports nos. 12 and SZ1. Includes English abstract. Abstract available as PB 100052s. 1p. Mi $1.25, Ph $1.25.

METHOD OF DETERMINING BROMINE IN AIRCRAFT FUELS (FKFS-VERFAHREN ZUR BESTIMMUNG DES BROMGEHALTES IN FLUGKRAFTSTOFFEN), by O. Widmaier. Stuttgart. Technische Hochschule. Forschungsinstitut für Kraftfahrwesen und Fahrzugmotoren. Jun 1943. 15p photos, graph, tables Mi $1.75, Ph $2.50. PB 98688
A method for determining in a short time the bromine content of leaded aircraft fuels is described. Ethylene bromide is added to leaded fuels to prevent the formation of lead oxide; it precipitates in crystalline form at temperatures considerably higher than -60°C. Bericht no. 1815 (Translation only). ZWB FB 1815.

PRELIMINARY CLASSIFIED INDEX OF TECHNICAL OIL MISSION REELS 1-259 AND 273-279, VOL. 1, COMPILED by W. M. Sternberg. U. S. Bureau of MINES. Dec 1949. 204p Mi $7.50, Ph $26.25. PB 99975
This report indexes the data collected and microfilmed in Germany and other parts of Europe by the Technical Oil Mission, operating under the auspices of the Ministry of Fuel and Power for Great Britain and the Petroleum Administration for War and the Bureau of Mines for the United States. For. v. 2 see PB 99976.

PRELIMINARY CLASSIFIED INDEX OF TECHNICAL OIL MISSION REELS 1-259 AND 273-279, VOL. 2, COMPILED by W. M. Sternberg. U. S. Bureau of Mines. Dec 1949. 224p Mi $8.00, Ph $28.75. PB 99976
For v. 1 see PB 99975.

PROBABLE EFFECTS OF SYNTHETIC FUEL PRODUCTION UPON THE PETROLEUM INDUSTRY, by Marshall R. Graham. Pittsburgh. University. 1947. 82p graphs, maps Mi $3.75, Ph $11.25. PB 98602
A comprehensive analysis is presented of the problems of industrializing the production of synthetic gasoline in competition with and substitution of gasoline at present obtainable from petroleum. The conclusion arrived at is that the production of synthetic gaseous and liquid fuels has great possibilities of becoming a major U. S. industry. It is predicted that the hydrocol process and the Tropsch-Fischer, or Lurgi, process will be used and that tar and shale oils will not be utilized.

PROCESSING OF CRUDE PHENOL OILS AND CATECHOL. I. G. Farbenindustrie A. G., Merseburg Ammonia Works, Merseburg, Ger. 1947. 50f diagrs, drawings, tables (Text in German) Mi $2.50, Enl Pr $7.50. PB 100080

1. Oils, Phenol containing 2. I. G. Farbenindustrie A. G., Leuna, Ger. 3. Micro BIOS FD 765/48, Frames 1-43.

Comprises Chapter IV p. 106-143 of an unnamed document. The chapter, however, is completed under the title: Processing of phenol oils at Leuna. Abstract available as PB 100080s. 2p. Mi $1.25, Ph $1.25.

PROGRESS REPORT NO. 2 - UNITED STATES GOVERNMENT CONTRACT NO. NOA (S)6583, by R. A. Moore. Socony-Vacuum Oil Co., Inc. Research and Development Laboratories, Paulsboro, N. J. Jun 1946. 29p graph, table Mi $2.00, Ph $3.75. PB 98772

The combustion characteristics of benzene, toluene, cumene, isooctane, AN-F-32, and 91 octane base stock were tested over a range of inlet air pressures from 20 psia to 30 psia. A maximum temperature rise was observed for fixed inlet air flow conditions, which varies with the fuel, and the relationship of pressure to maximum temperature rise was found to be logarithmic. Socony Vacuum Oil Co. Report no. 46.8-DX. USAF project MX 587.

PROPERTIES OF SPECIFICATION AN-F-58 FUEL, by M. W. Shayeson. U. S. Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio. Engineering Div. Power Plant Laboratory. Dec 1948. 11p graphs Mi $1.75, Ph $2.50. PB 98584

1. AN-F-58 (Fuel) 2. Fuels, Aviation - Specifications 3. AAF TSEPP 539-28.

RESEARCH ON FE AND FE-CU CATALYSTS: PERFORMANCE UNDER VARYING SYNTHESIS CONDITIONS, TRANSLATION by Max Leva. Kasier Wilhelm Institut, Göttingen, Ger. n.d. 9p tables Mi $1.25, Ph $1.25. PB 98496

A resume is given of investigations on iron catalysts. The preparation of the iron catalysts can be carried out technically in the same apparatus as that in which the cobalt catalyst is prepared. For the precipitation in both cases, soda may be used.

SOME PRELIMINARY INFORMATION ON THE HANDLING AND STORAGE OF HYDROGEN PEROXIDE, by J. F. Tormey. North American Aviation, Inc., Los Angeles, Cal. Aerophysics Laboratory. Nov 1946. 25p graphs, tables Mi $2.00, Ph $3.75. PB 98497

A discussion of the relatively new material, highly concentrated hydrogen peroxide is intended to relieve new workers of some of the uncertainty generally connected with a new and reactive substance of this sort. With proper attention and only normal precautions, pure hydrogen peroxide is not dangerous in itself. A list of rules for storing is presented, and handling suggestions are presented. Memorandum no. 50.

STABILITY IN STORAGE OF BECCO 90% HYDROGEN PEROXIDE, BY F. A. GILBERT AND N. MICHAELIS. BUFFALO ELECTRO-CHEMICAL CO., INC., BUFFALO, N. Y. U. S. NAVY CONTRACT NO. NOBS-31494. Sep 1948. 8p tables Mi $1.25, Ph $1.25. PB 98779

A summary report is given on the stability in storage of BECCO 90% hydrogen peroxide over a three year period. The H_2O_2 was stored in aluminum tanks and

the hydrogen peroxide concentration was determined by analysis prior to filling the storage tank or drum. Analyses were also made of all tank car shipments with samples retained for observation and future checking. Decomposition rates occurring in the 25,000 and 8000 gallon tanks and in samples of tank car shipments are tabulated. Technical report no. 4.

STORAGE TESTS WITH INGOLIN TANKS (LAGERVERSUCHE MIT INGOLINBEHÄLTERN), by Dr. Wehage. H. Walter, K. G., Kiel, Ger. Apr 1942. 5p photos, tables Mi $1.25, Ph $1.25. PB 98498

Tests were conducted on forty Ingolin (commercial hydrogen peroxide) tanks to determine storage stability of hydrogen peroxide in temperature range from 20-50°C with the tanks surface-treated and pickled with various chemicals compounds. The treatments consisted of pickling with nitric acid and afterwards with 8-hydroxyquinoline, Eloxal treatment WX and various types of wax application. The temperature of the containers and the amount of gas developed were measured continuously. AAF T-2 T 1034.

PART I. TWELVE INCH FLAT PLATE TESTS. II. ASPECT RATIO PROGRAM, BY S. T. CARPENTER, W. P. ROOP, E. KASTEN AND A. ZOLL. SWARTHMORE COLLEGE, SWARTHMORE, PA. PROGRESS REPORT. Dec 1949. 55p photos, diagrs, graphs, tables Mi $2.75, Ph $7.50. PB 99867

1. Ships - Plates - Tests 2. NAVSHIPS SSC 35.

Under Bureau of Ships Contract NObs-45521. Bureau of Ships, Navy Dept. Contract NObs-50148.

VARIATION WITH TEMPERATURE OF SURFACE TENSION OF LUBRICATING OILS, by Sydney Ross. Stanford University, Stanford, Calif. Feb 1950. 14p graphs, table Mi $1.75, Ph $2.50. PB 100013

Surface-tension measurements from room temperature to 180°C of a series of aeronautical lubricating oils and a few liquids of associated interest are reported. The critical temperatures of the liquids are calculated. NACA TN 2030.

HIGHWAYS AND BRIDGES

DAMAGE TO ROADS CAUSED BY THE DROUGHT OF 1947, by D. Croney and W. A. Lewis. Gt. Brit. Dept. of Scientific and Industrial Research. Road Research Laboratory, Harmondsworth, England. 1949. 19p photos, graphs Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $.25. PB 99885

Observations included measurements of the moisture distribution in the subgrade. The results of the investigations are summarized. Brief reference is also made to methods of preventing damage by drought. Main purpose of this note is to assist engineers to recognize when damage is caused by drought, so that a correct diagnosis may lead to appropriate remedial measures. The information may also be useful in relating the design features of new roads to the subsoil conditions. DSIR RRL RN 6.

INVESTIGATION OF FIELD AND LABORATORY METHODS FOR EVALUATING SUBGRADE SUPPORT IN THE DESIGN OF HIGHWAY FLEXIBLE PAVEMENTS, by

R. F. Baker and W. B. Drake. Kentucky. University. Engineering Experiment Station, Lexington, Ky. Sep 1949. 121p photos, fold. map, graphs, tables Available free from University of Kentucky. Engineering Experiment Station, Lexington, Ky. PB 100035

An extensive field investigation that involved the testing and sampling of 434.6 miles of road throughout the state is represented. Subgrade density, moisture content, and bearing values were obtained, and loadometer stations were operated to obtain the necessary traffic values. A detailed analysis was made of test results. This was sought to correlate performance, traffic, pavement thickness, and subgrade support. Bulletin no. 13 (v. 4, no. 1).

SOME CASES OF FROST DAMAGE TO ROADS. Gt. Brit. Dept. of Scientific and Industrial Research. Road Research Laboratory, Harmondsworth, England. 1949. 15p photos, graphs Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $.25. PB 100036

The damage caused to roads in Great Britain by severe and prolonged frost in 1947 was inspected by the Road Research Laboratory and a brief description is given of some of the more interesting examples. Particular attention was paid to cases where the road foundation had been affected and the majority of the examples given involve base or subgrade failures. DSIR RRL RN 8.

HIGHWAY RESEARCH ABSTRACTS, V. 19, NO. 11, DEC 1949. SYNOPSES ISSUE, 29TH ANNUAL MEETING. Dec 1949. 74p Available from Highway Research Board, 2101 Constitution Ave., N. W., Washington 25, D. C. Annual subscription $3.00, single copies $.30. PB 100015

INSTRUMENTS

AIR-DIELECTRIC, VARIABLE TRIMMER CAPACITORS AT LOW TEMPERATURES, by C. D. Crater. U. S. Squier Signal Laboratory, Fort Monmouth, N. J. Nov 1949. 21p photos, graphs, tables Mi $2.00, Ph $3.75. PB 100004

Report presents a review and analysis of available information concerning expected performance characteristics of trimmer capacitors at low temperatures. Data based on actual measurements of representative capacitors which design engineers may utilize in preparing new designs or modifying existing equipment is also presented. SCEL TM M-1213.

CALIBRATION OF WARBURG RESPIROMETERS. I. WEIGHING METHOD, by Willibald Jentschke and True W. Robinson. U. S. Air Force. Air Material Command, Wright Field, Dayton, Ohio. May 1949. 17p drawings, tables Mi $1.75, Ph $2.50. PB 99987

Report describes a procedure in which the usual weighing method is modified by applying a vacuum. With the new method, designed for rapid and accurate calibration of Warburg respirometers, one determination provides an accuracy of at least $\pm 0.02\%$. AAF TR 5823.

CHANG AND ENG IN USE, by W. H. Ray. U. S. Atomic Energy Commission. Oak Ridge National Laboratory. Dec 1944. 11p photo, drawings, tables Limited supply

mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100168

Description of an instrument for measuring the intensity of fast neutrons and which uses twin ionization chambers containing methane and argon respectively; discussion of principles and characteristics of operation, design, circuit, and calibration of instrument; appended is an outline of operating techniques; figures. AECD 2357.

CW INJECTION AS A MEANS OF DECREASING THE MINIMUM DETECTABLE SIGNAL OF A RADAR RECEIVER, by Harold D. Webb, Walter S. McAfee and Eugene D. Jarema. U. S. Camp Evans Signal Laboratory, Belmar, N. J. Dec 1944. 36p diagr, graphs, tables Mi $2.25, Ph $5.00. PB 100011

Measurements carried out under various conditions indicate approximately 10db decrease in minimum detectable signal which is made possible by injecting coherent CW in phase with incoming signals. A 3db decrease is possible by injecting CW from a signal generator which is not exactly tuned to the desired signal. A theoritical analysis of the problem is also given. CESL TR T-32.

DIRECT-READING R-F WATTMETER, by William E. Leavitt and Harris F. Hastings. U. S. Naval Research Laboratory, Bellevue, D. C. Sep 1949. 30p diagrs (part fold), graphs, table Mi $2.00, Ph $3.75. PB 100135

A direct-reading wattmeter has been developed which provides an accurate and easy method for measuring powers from 30 to 3000 microwatts. It contains a feedback-controlled circuit which automatically substitutes self-measured d-c power for the r-f power in a thermistor. A method for checking the operation of the wattmeter is also described. NRL R 3540.

HIGH ENERGY NEUTRON DETECTOR, by Clyde Wiegand. U. S. Atomic Energy Commission, Oak Ridge, Tenn. Apr 1948. 5p drawing, graphs Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100122

The paper describes a neutron detector suitable for monitoring a flux of neutrons whose energy is greater than about 50 Mev. Detection of the neutrons is accomplished by their ability to induce fission in heavy elements. Manuscript has been submitted to the Review of Scientific Instruments for possible publication. AECD 2168. MDDC UCRL 125.

HIGH VOLTAGE PULSER FOR 184-INCH CYCLOTRON ELECTRIC DEFLECTOR, by Q. A. Kerns, W. R. Baker, R. F. Edwards and G. M. Farly. U. S. Atomic Energy Commission, Oak Ridge, Tenn. Apr 1948. 11p photos, drawings Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100118

This paper describes a high voltage pulse generator developed to deflect the beam of the 184-inch cyclotron at Berkeley, California. The apparatus develops a deflecting potential of 200 kilvolts that rises from 10 per cent to 90 per cent of peak value in 0.1 microseconds. AECD 2117. MDDC UCRL 95.

MEASUREMENT OF APPARENT VISCOSITIES OF GREASES WITH THE S.O.D. PRESSURE VISCOMETER. PT. I: CALIBRATION OF THE INSTRUMENT, by Cyril J. Breza, Leo F. Salzberg. U. S. Air Materiel Command. Engineering Division. Materials Laboratory, Wright Field, Dayton, Ohio. Nov 1946. 11p diagrs, graphs

tables Mi $1.75, Ph $2.50. PB 98686

In a calibration of the S.O.D. pressure viscometer, a careful re-calibration and standardization of capillaries, pumps, gages, and hydraulic fluid mixtures became necessary. Oils were selected to give correct blends for any temperature within the range +77°F to -85°F. The S.O.D. pressure viscometer was completely calibrated, and the corrections so obtained may be applied to all observed data, necessary for the determination of apparent grease viscosities, by use of Poiseuille's equation for capillary flow. AAF TSEAM MR M5205 Pt. 1.

MODEL C4T1C BATTERY-OPERATED ALPHA HAND COUNTER, by Herbert E. Meyer and Warren L. Hood. Monsanto Chemical Co. Clinton Laboratory, Oak Ridge, Tenn. May 1948. 26p photos, drawings, graphs Limited supply mimeo $.15. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.15. PB 99358

Description, circuit analysis, operation, calibration, and maintenance of a small, battery-operated, semi-portable alpha monitor; construction drawings. AECD 2364. MDDC MonP 111.

RELATIVE SENSITIVITIES OF SOME ORGANIC COMPOUNDS FOR SCINTILLATION COUNTERS, by R. F. Taschek. U. S. Atomic Energy Commission. Los Alamos Scientific Laboratory. Aug 1948. 3p graphs Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100162

Ten organic scintillating materials are compared for relative efficiency; stilbene was found to be the best material tested and several times better than anthracene; graphs. Manuscript has been submitted to the Physical Review for possible publication. AECD 2353. MDDC LADC 571.

SEARCH FOR THREE-WAY FISSION OF U^{238} BY 14-MEV NEUTRONS, by L. Rosen and R. Taschek. U. S. Atomic Energy Commission. Los Alamos Scientific Laboratory. Sep 1947. 2p photo Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100172

Describes use of photographic technique for investigation of the possibilities of disintegration of a U^{238} nucleus into 3 particles of comparable masses when exposed to 14 Mev neutrons; results. AECD 2452. MDDC LACD 542.

VERWENDUNG VON LICHTINTERFERENZEN IN DER TECHNISCHEN MESSUNG. (USE OF LIGHT INTERFERENCE FOR TECHNICAL MEASURING PROCEDURES), by Th. Zobel. May 1937. 8p photos, diagrs (Text in German and English) Mi $1.25, Ph $1.25. PB 99959

A synopsis is presented of the origin and utilization of interference phenomena and their application to technical measuring methods. The Toepler Schlieren and shadow methods are compared with interference methods. Special reference is made to the "Mach-Zehnder" refractometer. This instrument separates the space between two interfering beams of light rays, thus preventing their influence upon one another. Interferometers are considered especially suited for measurement of flow phenomena in the subsonic and supersonic regions in thermodynamic, gas dynamic, and ballistic investigations, as well as in the studies of the density of gaseous, liquid, or solid transparent mediums. From VDI-zeitschrift v. 81, no. 22. p. 619-624.

LEATHER AND LEATHER PRODUCTS

TECHNIQUE OF THE GERMAN LEATHER INDUSTRY. BIOS TRIP 2655, PT I. DESCRIPTION OF MACHINERY, EQUIPMENT, PROCESSES, CHEMICALS ETC. CONNECTED WITH THE LEATHER INDUSTRY. British Intelligence Objectives Sub-Committee. n.d. 763f photos, drawings Mi $9.00, Enl Pr $101.25. PB 99920
1. Leather industries - Germany 2. Leather - Chemical agents - Germany 3. Leather - Manufacture - Germany 4. Leather - Tanning - Germany 5. BIOS trip 2655 pt. 1 6. Micro BIOS FD 934/49, Frames 1-437, 494-833.
For pt. 2 see PB 99921. Abstract available as PB 99920s. 3p. Mi $1.25, Ph $1.25.

LUMBER AND WOOD PRODUCTS

DESIGN OF TIMBER FLOORS TO PREVENT DRY ROT. Gt. Brit. Dept. of Scientific and Industrial Research. Building Research Station, Watford, England. Dec 1948, Reprinted 1950. 8p diagrs, drawings Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $.05. PB 100375
This paper discusses the selection of timber, general constructional precautions, insulation of building from ground moisture, preservative treatment consideration of separate types of floors and floor coverings. Building Research Station Digest no. 1. DSIR BRD 1.

GŌSEI JUSHI MOKUZAI OYOBI PURASUCHIKKU-ZAIRYŌ O ŌYŌSURU KITAI KŌZŌ NO KENKYU, DAI IPPO KISOTEKI KENKYŪ HŌSHIN (SYNTHETIC RESINS AND PLASTIC MATERIALS FOR AIRFRAME STRUCTURE). Fuji Aircraft Corp., Japan. n.d. 13p (Text in English and Japanese). Mi $1.75, Ph $2.50. PB 98755
The suitability of various adhesives and bonding agents for aircraft structural applications is studied in order to evaluate the substitution of plywood and laminated wood for metal in airframe components. Test procedures for determining adhesive strength, water resistance, gasoline-resistance, gluing methods, design criteria and strength are outlined. Japanese text will not reproduce well. AAF T-2 T/5010.

NON-PRESSURE TREATMENTS OF ROUND NORTHERN WHITE CEDAR TIMBERS WITH CREOSOTE, by Everett Edgar King. Illinois. University. Engineering Experiment Station, Urbana, Ill. Jul 1948. 59p photos, graphs, tables Available from Univ. of Illinois, $.20. PB 99012
University of Illinois Bulletin v. 45, no. 67. Engineering experiment Station. Bulletin no. 379.

USE OF TIMBER IN ALL BUILDING WORK. GT. BRIT. MINISTRY OF WORKS. ECONOMY MEMORANDUM. TIMBER NO. 2 (REVISION OF MEMORANDUM P. I. 80). Sep 1949. 15p drawing, tables Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $.15. PB 100038
Restrictions have been imposed on the use of softwood to ensure the least possible disruption of building through lack of material. Hardwood and plywood have been recommended as substitutes for softwood.

WALLBOARD PRODUCTION AND USES. Northeastern Wood Utilization Council, New Haven, Conn. Jan 1950. 184p Available from Northeastern Wood Utilization Council, New Haven 6, Conn. P. O. Box 1577 $4.00. PB 99999

In view of the growing interest in wallboard as a method of utilizing the waste from wood using plants, and supplementing our lumber supply, the Council arranged a conference on the subject. This bulletin gives the full text of the papers presented by representatives of companies here and abroad engaged in the production of various types of wallboard. Methods of making resin bonded wallboard are covered and the machinery required for wallboard production is discussed. The hope was expressed that the conference would lead to the establishment of a number of wallboard plants. The Council as an independent non-profit agency, indicated a willingness to aid any such new ventures. Report of Conference at Cambridge, Mass., Sep 16, 1949.

MACHINERY

BERICHT ÜBER DIE ZWEITAKT-ENTWICKLUNG IN WERK OBERURSEL (REPORT ON THE DEVELOPMENT OF A TWO-CYCLE ENGINE AT OBERURSEL). Klöckner-Humboldt-Deutz A. G., Cologne, Ger. n.d. 10p Mi $1.25, Ph $1.25. PB 99958

A report is given on the development since 1935 of two-cycle gasoline and Diesel engines for aircraft, speedboats, and submarines in Germany. Data are given on these tests made on single-cylinder Diesel, gasoline, and gasoline-injection engines, eight-cylinder radial Diesel engines, and 12- and 16-cylinder Diesel aircraft engines. Translation only, original document not available. AAF T-2 T/3014.

CEMENTED CARBIDE CUTTING TOOLS. U. S. Bureau of Ships. Sep 1944. 8p photos, drawings, graphs Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $.25. PB 99456

1. Tools, Cutting - Carbide 2. Tools, Cutting - Carbide tipped 3. NAVSHIPS IN 21 4. NAVSHIPS IN 41 5. NAVEXOS (PM 210)-4

Industrial Notes no. 21. Includes also Cemented carbide tips - Methods of brazing, May 1945. U. S. Bureau of Ships. Industrial notes no. 41.

(1) CUTTING EXPERIMENTS ON NOVOTEX WITH HARD METAL TOOLS. (2) CUTTING TESTS ON STEEL WITH XX TOOL TIPS. Studiengesellschaft Hartmetall, Berlin. 1940. 5f (Text in German) Mi $1.25, Enl Pr $2.50. PB 99933

1. Novotex (Trade name) 2. Tools, Cutting - Hard facing - Germany 3. Micro BIOS FD 3830/47, Frames 1-3.

Includes English abstract. Abstract available as PB 99933s. 1p. Mi $1.25, Ph $1.25.

DRAWINGS OF CENTRIFUGAL CASTING MACHINE AND ILLUSTRATED WORKING INSTRUCTIONS. Schwietzke, J. G., Dusseldorf, Ger. 1930-1947. 157f drawings (Text in German and English) Mi $6.00, Enl Pr $21.25. PB 100047

1. Machines, Casting - Centrifugal - Germany 2. Machines, Casting - Drawings - Germany 3. SMG2 (Centrifugal casting machine) 4. SMG3 (Centrifugal casting machine) 5. Micro BIOS FD 2190/48, Frames 1-38.

Four listed drawings are omitted. English abstract included. Abstract available as PB 100047s. 1p. Mi $1.25, Ph $1.25.

DRAWINGS RELATING TO BLAST FURNACE NO. 7. Hoesch A. G., Dortmund, Ger. 1947. 24f drawings Mi $2.00, Enl Pr $5.00. PB 100252
1. Furnaces, Blast - Germany 2. Micro BIOS FD 4978/47, Frames 1-5+14.
List of drawings in English. Part of fourth drawing missing. Legends in German. Abstracts available as PB 100252s. 1p. Mi $1.25, Ph $1.25.

ENGINE PERFORMANCE XI-2220 ENGINE: EFFECT OF WATER AND ALCOHOL INJECTION ON SINGLE CYLINDER ENGINE PERFORMANCE, by R. K. Stone. Chrysler Corporation. Engineering Div., Detroit, Mich. Jul 1945. 22p graphs Mi $2.00, Ph $3.75. PB 99947
Tests were conducted on a single and twin cylinder version of the XI-2220 reciprocating engine to determine its response to the addition of water and water-alcohol mixtures to the fuel. Carburetion for both fuel and water was used on the twins while fuel was usually cylinder injected on the single. All results are tabulated and shown graphically. Technical report no. A-60402.11. Contract W-535-ac-18195.

EVALUATION OF AIRESEARCH ELECTRIC TANK WARMUP AND DIVERTER VALVE (MANUFACTURER'S DRAWING NO. 12210) PROJECT TED NO. NAM-04587, 6 AUG 1945-19 JUL 1946, by S. C. Hill. U. S. Naval Air Material Center. Aeronautical Engine Laboratory, Philadelphia, Pa. Sep 1946. 20p photos, diagr, graphs, table Mi $1.75, Ph $2.50. PB 99961
Tests were conducted on the Airesearch electric tank warm-up and diverter valve. The function of this valve is to assist in tank warm-up and to permit dilution of the warm-up circuit oil regardless of the oil inlet temperature. NAV AEL 928.

FERROPRINTS RELATING TO A GAS FIRED FURNACE NO. 5806. Chemisches-Laboratorium für Tonindustrie und Tonindustrie Ztg., H. Seger & E. Cramer, K. G., Berlin. 1947. 23f drawings (Text in German) Mi $2.00, Enl Pr $5.00. PB 100061
1. Furnaces, Gas - Germany 2. 5806 (Kapselofen) 3. Micro BIOS FD 4727/47, Frames 1-20+1.
Includes English abstract. Abstract available as PB 100061s. 1p. Mi $1.25, Ph $1.25.

FINAL REPORT OF THE JOINT STANDING COMMITTEE ON THE SAFETY OF HEAVY POWER PRESSES. BENDING BRAKES, by H. R. Rogers and others. Gt. Brit. Ministry of Labour and National Service. 1949. 17p drawings, tables Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $.15. PB 99988
1. Presses, Heavy - Gt. Brit.

INTEGRATING MOTORS. Siemens-Schuckertwerke A. G., Nuremberg, Ger. 1944. 104f drawings (Text in German) Mi $4.50, Enl Pr $15.00. PB 99912
1. Motors, Integrating - Germany 2. Micro BIOS FD 1915/49, Frames 1-104.
General production guidance sheet)152-4601 A-1 Fa O1) and General guidance sheet for testing (152-4601 A-1 Pa O1) are omitted. Abstracts available as PB 99912s. 1p. Mi $1.25, Ph $1.25.

KILNS FOR THE HIGH-TEMPERATURE FIRING REFRACTORIES. Oems Ittner & Cie, Cologne, Ger. 1937-1942. 19f tables (Text in German) Mi $1.75, Enl Pr $3.75. PB 100062

1. Kilns - Construction - Germany 2. Micro BIOS FD 364/48, Frames 1-2+14.
Includes English abstract. Abstract available as PB 100062s. 1p. Mi $1.25, Ph $1.25. Many frames are illegible.

LEYENSETTER PENDULUM FOR TESTING THE CUTTING PERFORMANCE OF TOOLS AND THE CUTTING RESISTANCE OF MATERIALS. Osram G.m.b.H., Berlin. 1932. 5f photos, diagrs, graphs (Text in German) Mi $1.25, Enl Pr $2.50. PB 100050
1. Tools, Cutting - Tests - Germany 2. Pendulums - Germany 3. Micro BIOS HEC 11,004 4. BIOS FR 925 LD 5. Micro BIOS FD 3720/47, Frames 1-4.
English abstract included. Abstract available as PB 100050s. 1p. Mi $1.25, Ph $1.25. Includes article from Archiv für das Eisenhüttenwesen, v. 4, no. 1, Jul 1930.

MACHINE TOOL COMPONENTS, ALIGNMENT OF. U. S. Bureau of Ships. Jan 1950. 14p photos, drawings Mi $1.75, Ph $2.50, Mimeo: $.50. PB 100091
1. Tools, Machine - Parts - Alignment 2. Tools, Machine - Operation 3. NAVSHIPS IN 100 4. NAVSHIPS 250-740.

PERFORMANCE TESTS ON A NEW MODEL OF THE MARATTI KNITTING MACHINE. Germany Reichsstelle für Textilwirtschaft. Wirtschaftsgruppe Textilindustrie, Berlin. 1943-1947. 64f photos, diagrs, drawings, tables (Text in German and English) Mi $3.00, Enl Pr $10.00. PB 99929
1. Knitting machines - Germany 2. KL37 (Maratti knitting machine) 3. Micro BIOS FD 106/49, Frames 1-64.
Abstract available as PB 99929s. 1p. Mi $1.25, Ph $1.25.

PORTABLE ELECTRIC HOME MILK PASTEURIZERS, by A. E. Baragar and F. A. Downs. Nebraska. Agricultural Experiment Station, Lincoln, Neb. Oct 1948. 19p photos, drawing, tables Available from Nebraska Agricultural Experiment Station, Lincoln, Neb. PB 99176
1. Milk - Pasteurization - Machinery
Research bulletin 157.

MEDICAL RESEARCH AND PRACTICE

ACTIVITIES IN CONNECTION WITH HIGH FREQUENCY RESEARCH. Helmholtz-Institut, Brannenburg, Ger. May 1944-Jul 1945. 48f Mi $2.50, Enl Pr $7.50. PB 100322
1. High frequencies - Research - Germany 2. Medical research - Germany 3. Micro BIOS FD 383/48, Frames 1-46.
Contains abstracts of Research reports no. 1-12 and Technical reports 1-9. Abstract available as PB 100322s. 2p. Mi $1.25, Ph $1.25.

FOLLOW-UP STUDY OF NEUROPSYCHIATRIC CASES WHICH APPEARED BEFORE THE 1ST C.M.E. BY WALTER A. CARLSON AND JAMES A RAFFERTY. U. S. AIR FORCE. SCHOOL OF AVIATION MEDICINE, RANDOLPH FIELD, TEX. PROJECT NO. 21-02-027. Nov 1949. 14p tables Mi $1.75, Ph $2.50. PB 100034
An attempt is made to determine post-war psychiatric status of flying combat AAF officers who incurred anxiety reactions during World War II. This study indi-

cates a need in combat units for more medical officers who are orientated to psychiatry, alert to recognize early signs of anxiety and willing to assume the responsibility of recommending treatment and rehabilitation measures. Tables and bibliography included.

GEGENWARTSFRAGEN DER LUFTMEDIZIN (CURRENT PROBLEMS OF AVIATION MEDICINE) by S. Ruff. Deutsche Versuchsanstalt für Luftfahrt E. V., Berlin. Apr 1946. 27p Mi $2.00, Ph $3.75. PB 99954

A few of the more important problems of German aviation medicine in the fields of high altitude flights, high speed, long range, and night flight are analyzed. The effects on the human system of inadequate oxygen supply, of the drop in total air pressure at altitudes above 10,000 ft. of sudden decompression, and of the accelerations and mass forces that occur during high speed flight maneuvers and parachute jumps are discussed. Pilot comfortization, the effect of vibration, noise, etc., in causing fatigue during long flights, and numerous physiologic - optical problems in night flying are considered. Reprinted from Luftfahrt und Schule jahrg. 8, pt. 7-9, Apr-Jun 1943.

STUDIES OF THE KINETICS OF POTASSIUM EXCHANGE BETWEEN CELLS AND PLASMA OF CANINE BLOOD IN VITRO USING K^{42}, by C. W. Sheppard and W. R. Martin. U. S. Atomic Energy Commission. Oak Ridge National Laboratory. Aug 1948. 10p drawing, graphs, tables Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100144

Experimental procedures described and results summarized. AECD 2249.

STUDY OF ACCLIMATIZATION DURING A TWO-WEEK EXPOSURE TO MODERATE ALTITUDE, SOME OBSERVATIONS ON THE EFFECTS OF ALTITUDE ON METABOLISM. PROJECT NO. 21-02-029, REPORT NO. 2: LIVER FUNCTION, by Roger K. McDonald and Vincent C. Kelley. U. S. Air Force. School of Aviation Medicine, Randolph Field, Tex. Oct 1949. 10p tables Mi $1.25, Ph $1.25. PB 100033

A study of liver function by means of a number of different tests in a group of Air Force personnel before, during, and after a two-week period of acclimatization at an elevation of 10,000 feet. Bibliography attached.

SUMMARY TABLES OF BIOLOGICAL TESTS. V. 1, NO. 2, P. 59-121. U. S. National Research Council. Chemical-Biological Center. Dec 1949. 72p Mi $3.50, Ph $10.00. Also available free from National Research Council, 2101 Constitution Ave., Washington, D. C. PB 99693

The tables are arranged according to the type of test performed. The data are identified by the name of the screening agency and by a description of the technique used. Chemical Abstracts System of Nomenclature is used. All compounds submitted were assigned a specific serial number. Each test and its details are recorded on a report form so that additional data are available, if required, on request.

THROMBOPENIC PURPURA - THE FAILURE OF DIRECT BLOOD TRANSFUSION TO RAISE THE PLATELET LEVEL, by John S. Lawrence, William N. Valentine and William S. Adams. U. S. Atomic Energy Commission. Apr 1948. 6p Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05: PB 100106

It was concluded that with the methods of direct blood transfusion employed, no platelet elevation of practical significance resulted from massive transfusion. Case histories are presented and discussed. AECD 2016. MDDC UR 22.

VIABILITY OF INDIVIDUALS HETEROZYGOUS FOR RECESSIVE LETHALS, by Edward Novitski and Curt Stern. U. S. Atomic Energy Commission, Oak Ridge, Tenn. Jun 1948. 4p tables Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100111

The significance of recessive lethals for the dynamics of populations is often considered solely in relation to their effect in homozygous or hemizygous state. The assumption is thus made that individuals heterozygous for these lethals are equivalent to homozygotes free from the lethal alleles. This assumption has been tested for 33 sex-linked lethals in Drosophila melanogaster and found to be incorrect for the majority of them. AECD 2062. MDDC UR 28.

METALS AND METAL PRODUCTS

ALFER: SHEET RANGING IN THICKNESS BETWEEN 0.3 AND 0.45 MM. SHOWING STRONG MAGNETOSTRUCTION ... I.E. MAGNETO-STRICTIVE ACTIVITY - 0.050 TO 0.058, by Kotaro Honda and others. Nov 1945. 6p tables Mi $1.25, Ph $1.25. PB 99946

Composition, properties, and manufacture of "Alfer" is discussed. When Al content becomes more than 5.9% its magnetic striction has positive values. In a constant magnetic field of 1100 oersted, if Al content is less than 5.3%, the magnetic striction is negative. An alloy containing 13.4% Al, has a magnetic striction of as high as 40×10^{-6} in a magnetic field of 1200 oersted. This is suitable for an oscillator for supersonic waves. Nav. Tech. Jap. interrogation no. 56. Pages numbered 136-141. This report will not reproduce well.

APPLICATION OF THE EXPLOSIVE TEST TO EVALUATE SHOCK PROPERTIES OF HIGH YIELD STRENGTH STEELS. PART I. PRELIMINARY INVESTIGATION OF TECHNIQUES FOR DIRECT EXPLOSION TESTING OF HIGH YIELD STRENGTH STEELS, BY A. MULLER, W. G. BENZ AND W. A. SNELLING. PART II. THEORETICAL INVESTIGATION OF THE FRACTURE OF STEEL PLATES UNDER EXPLOSIVE LOADING, BY EDWARD SAIBEL. U. S. NATIONAL RESEARCH COUNCIL. COMMITTEE ON SHIP CONSTRUCTION. FINAL REPORT. Jul 1949. 82p photos, drawings, graphs, tables Mi $3.75, Ph $11.25. PB 98410

1. Steel - Fracture tests 2. Steel - Impact tests 3. Steel plates - Explosion tests 4. NAVSHIPS SSC 29.

CAUSE OF CLEAVAGE FRACTURE IN SHIP PLATE, HIGH YIELD STRENGTH STRUCTURAL STEEL, BY A. BOODBERG AND E. R. PARKER. CALIFORNIA. UNIVERSITY. FINAL REPORT. Sep 1949. 95p photos, diagrs, drawings, graphs, tables Mi $4.25, Ph $12.50. PB 99971

1. Ships - Plates - Fractures 2. NAVSHIPS SSC 28.

Under Bureau of Ships Contract NObs 31222. Bureau of Ships, Navy Department, Contract NObs 34231.

CAUSES OF CLEAVAGE FRACTURE IN SHIP PLATE, TESTS OF RESTRAINED WELDED SPECIMENS AND HATCH CORNER SPECIMENS OF MILD STEEL.

PROGRESS REPORT by A. Boodberg and E. R. Parker. U. S. National Research Council. Committee on Ship Construction. Aug 1949. 66p photos, drawings, graphs, tables Mi $3.00, Ph $8.75. PB 98508
1. Ships - Plates - Fracture tests 2. Hatches - Design - Tests 3. NAVSHIPS SSC 27.
For final report see PB 92112.

COLD WORK AND HARDNESS TESTS ON IRON-METALLIC OXIDE AND METALLIC SULPHIDE ALLOYS. TESTING OF IRON-IRON OXIDE SINTERED COMPACTS, MADE BY THE WIDIA WORKS. Studiengesellschaft Hartmetall, Berlin. 1943-1944. 19f photos, diagr, tables (Text in German) Mi $1.75, Enl Pr $3.75. PB 100059
1. Sulfides - Germany 2. Iron oxides - Production - Germany 3. Krupp, Friedrich, A. G., Widia Fabrik, Berlin 4. Micro BIOS FD 3951/47, Frames 1-18 5. Micro BIOS HEC 11421 6. Micro BIOS HEC 11426 7. Micro BIOS HEC 11429 8. Micro BIOS HEC 11432 9. BIOS FR 925, Item 21,22 (App.1) LD
Includes English abstract. Abstract available as PB 100059s. 2p. Mi $1.25, Ph $1.25. Listed in BIOS FR 925, Item 21,22 (App.1) (PB 79296). Referred to in Micro BIOS FD 3972/47, summary.

DETERMINATION OF THE BEND STRENGTH OF G 1 HARD METAL. Studiengesellschaft Hartmetall, Berlin. Oct 1941. 4f photo, table (Text in German) Mi $1.25, Enl Pr $2.50. PB 100057
1. Metals, Hard - Bending - Germany 2. G1 (Hard metal) 3. Micro BIOS HEC 11338 4. Micro BIOS FD 3898/47, Frames 1-7 5. BIOS FR 925, Item 21,22 LD.
Includes English abstract. Abstract available as PB 100057s. 1p. Mi $1.25, Ph $1.25. Listed in BIOS FR 925, Item 21, 22 (App. 1) (PB 79296).

DISLOCATION THEORY OF THE FATIGUE OF METALS, by E. S. Machlin. U. S. Lewis Flight Propulsion Research Laboratory, Cleveland, Ohio. 1949. 14p diagrs, graphs Available from Supt. of Documents, U. S. Government Printing Office, Washington 25, D. C. $.15. PB 100192
A dislocation theory of fatigue failure for annealed solid solutions is presented. On the basis of this theory, and supported by laboratory data, an equation giving the dependence of the number of cycles for failure on the stress, the temperature, the material parameters, and the frequency is derived for uniformly stressed specimens. As a result of this investigation, a modification of the equation for the steady-state creep rate previously developed on the basis of the dislocation theory is suggested. NACA 929.

EFFECT OF CYCLIC STRESS ON THE TRANSITION TEMPERATURE OF STEEL, by H. E. Jacques. U. S. National Research Coundil. Committee on Ship Construction. Jul 1949. 45p photos, diagrs, graphs, tables Mi $2.50, Ph $6.25. PB 98409
1. Steel - Fatigue tests 2. Steel - Impact tests 3. NAVSHIPS SSC 31.

EFFECT OF HARDNESS TEST INDENTATIONS ON "N" HARD METAL ALLOYS (PRÜFUNG DER HÄTEEINDRÜCKE AN N-HARTMETALL LEGIERUNGEN). Studiengesellschaft Hartmetall, Berlin. Nov 1940. 8f photos (Text in German) Mi $1.25, Enl Pr $2.50. PB 100049
1. Metals - Hardness tests - Germany 2. Metals, Hard - Tests - Germany 3. Micro BIOS HEC 11228 4. BIOS FR 925 LD 5. Micro BIOS FD 3837/47, Frames 1-7.
English abstract included. Abstract available as PB 100049s. 1p. Mi $1.25, Ph $1.25.

EFFECT OF NEUTRON BOMBARDMENT ON ORDER IN THE ALLOY CU_3AU, by Sidney Siegel. U. S. Atomic Energy Commission, Oak Ridge National Laboratory. Dec 1948. 2p table Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100175

Theoretical discussion and experimental studies in which the effect of neutrons on the crystal structure of Cu_3Au is observed by measurement of electrical resistivity before and after exposure; tabulated data. AECD 2465.

EVALUATION OF IMPROVED MATERIALS AND METHODS OF FABRICATION FOR WELDED STEEL SHIPS, BY R. W. BENNETT, R. G. KLINE, M. FORMAN, P. J. RIEPPEL AND C. B. VOLDRICH. BATTELLE MEMORIAL INSTITUTE, COLUMBUS, OHIO. PROGRESS REPORT. Nov 1949. 95p photos, drawings, graphs, tables Mi $4.25, Ph $12.50. PB 99866

1. Ships - Welding - Tests 2. Welding - Strength 3. NAVSHIPS SSC 33. Under Bureau of Ships Contract NObs-45543. Bureau of Ships, Navy Dept. Contract NObs-50148.

HÖGVÄRDIGT STAL SOM ARMERING I BETONGBALKAR FÖRANKRING, SKARVNING, SPRICKBILDNING. (HIGH-GRADE STEEL AS REINFORCEMENT IN CONCRETE BEAMS, ANCHORAGE, JOINTED BARS, CRACK FORMATION),av Björn Örbom. Sweden. Statens Provningsanstalt, Stockholm. 1948. 47p photos, diagrs, graphs, tables (Text in Swedish) Mi $2.50, Ph $6.25. PB 98868

1. Concrete, Reinforced - Steel - Sweden 2. Bars, Jointed - Steel reinforced - Sweden 3. Foundations - Steel reinforced - Sweden 4. Steel, High speed - Strength - Sweden 5. Sweden. Statens Provningsanstalt, Stockholm. Meddelande 103. Summary in English.

MAGNETOSTRICTION, YOUNGS' MODULUS AND DAMPING OF 68 PERMALLOY AS DEPENDENT ON MAGNETIZATION AND HEAT TREATMENT, by H. J. Williams and others. n.d. 21p drawings, diagrs, graphs Mi $2.00, Ph $3.75. PB 99966

This paper describes measurements of the changes in certain physical properties of 68 permalloy that result from different thermal and mechanical treatments and considers them in relation to the domain theory. The magnetostriction, Young's Modulus, and vibrational energy have been determined as a function of the magnetization for specimens of 68 permalloy, each of which had been given one of five different mechanical and heat treatments.

MATERIAL, CASTINGS, MAGNESIUM ALLOY, CORROSION PROTECTION AGAINST EFFECTS OF WATER AND LEADED FUEL. TEST NO. F-1700, MODEL XB-36. FGT-422, by S. Witkoff. Consolidated Vultee Aircraft Corp. Fort Worth Div., Fort Worth, Tex. May 1946. 10p photos, tables Mi $1.25, Ph $1.25. PB 99964

A test was conducted to determine what corrosion effects, if any, would be induced by immersing castings treated with various protective coatings in water and leaded fuel for a period of 1 month. This test resulted in the removal of sealed chrome pickle by water in 4 days, removal of CVAC #1 anodized by water in 32 days, a very slight local corrosion on the area of sealed chrome pickle casting immersed in water, very slight localized pitting on Nelite covered anodized casting (contaminated surface prior to Nelite application), no corrosion on Nelite covered sealed chrome pickled casting, and Nelite remaining uneffected after water and gasoline exposure.

MATERIAL-MAGNESIUM ALLOYS, CORROSION RESISTANCE OF, by Robert A. Eck and Paul Cutter. Consolidated Vultee Aircraft Corp., Fort Worth Div., Fort Worth, Tex. Apr 1944. 228p photos, graphs, tables Mi $8.00, Ph $28.75. PB 99957

Several magnesium alloys were exposed to corrosion tests to determine their resistance to corrosion after being coated with several different combinations of inhibitors. The tests were subdivided into the following phases: salt spray exposure - up to 1320 hr, accelerated corrosion - up to 216 hr, and weathering - up to 600 hr. From the tests it was determined that the following combinations of inhibitors were the most effective: Mg alloy AM3s coated with C.V.A.C. #1 A.C. and one coat zinc chromate primer, Mg alloy AMC52S coated with C.V.A.C. #1 D.C. and one coat zinc chromate primer, and Mg alloy AMC57S coated with C.V.A.C. #1 D.C. and one coat zinc chromate primer. Report FGT-154.

MATERIAL, MAGNESIUM ALLOY, DISSIMILAR METAL CORROSION. CONSOLIDATED VULTEE AIRCRAFT CORP. FORT WORTH DIV., FORT WORTH, TEX. REPORT FTG-228. TEST F-624, MODEL XB-36, JUL 15-OCT 28, 1944, by John C. Marcia and Paul R. Cutter. Nov 1944. 49p photos, tables Mi $2.50, Ph $6.25. PB 100006

Tests were made to compare the galvanic corrosion inhibiting properties of C.V.A.C. #1, AC, C.V.A.C. $1, DC and Dow #7 finishes on AMC52S-H magnesium alloy panels when brought in contact with dissimilar metal attachments, and to determine the additional corrosion protection offered by various supplementary coats of paint applied before and after assembly, and the effect of zinc chromate primer when applied as an insulator between the assembled parts. Photographic results are included for all specimens.

MEASUREMENT OF DEFLECTION OF HARD METAL IN RELATION TO THE LEAD. Studiengesellschaft Hartmetall, Berlin. Dec 1940. 10f graphs, table (Text in German) Mi $1.25, Enl Pr $2.50. PB 100048

1. Metals, Hard - Deformation - Germany 2. Micro BIOS FD 3838/47, Frames 1-9.

English abstract included. Abstract available as PB 100048s. 1p. Mi $1.25, Ph $1.25.

PRELIMINARY OBSERVATIONS OF URANIUM METAL ON WOUND HEALING WITH REFERENCE TO GAS FORMATION, by W. F. Neuman, Roberta Allen and B. J. Mulryan. U. S. Atomic Energy Commission, Oak Ridge, Tenn. Jan 1949. 2p Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100170

Describes small scale tests conducted to determine whether uranium resulted in gas formation when exposed to tissue fluids. AECD 2476. MDDC UR 50.

REDUKTION VON ROESTBLENDE MIT KOHLENOXYD (REDUCTION OF ROAST BLENDE WITH THE AID OF CARBON MONOXIDE). Metallgesellschaft A. G., Frankfurt am Main, Ger. Oct 1934. 5f table (Text in German) Mi $1.25, Enl Pr $2.50. PB 100257

1. Iron ores - Magnetic roasting - Germany 2. Lebedenko-Elian process (Roast blende reduction) 3. BIOS FR 335 LD 4. Micro BIOS FD 4842/47, Frames 678-682.

Listed on p. 188 of BIOS FR 335. Abstract available as PB 100257s. 1p. Mi $1.25, Ph $1.25.

REPORT ON TESTING OF SINTERED ALUMINIUM RODS. Studiengesellschaft Hartmetall, Berlin. 1942. 5f tables (Text in German) Mi $1.25, Enl Pr $2.50. PB 100060

1. Aluminum, Sintered - Tests - Germany 2. Micro BIOS FD 3908/47, Frames 1-4 3. BIOS FR 925, Item 21, 22 (App. 1) LD.

Includes English abstract. Abstract available as PB 100060s. 1p. Mi $1.25, Ph $1.25. Listed in BIOS FR 925, Item 21, 22 (App. 1) (PB 79296).

RESEARCH ON AND PRODUCTION OF WIDIA HARD METALS FOR TOOL TIPS AND WIDIA HARD CORES. Krupp, Friedrich A. G., Widia Fabrik, Essen, Ger. 1941-1945. 719f photos, drawings, graphs, tables Mi $9.00, Enl Pr $93.75. PB 99925

1. Widia tools 2. Metals, Hard - Production 3. Tools - Hard facing 4. Micro BIOS FD 4753/47, Frames 1-636+20.

Includes English abstract. Abstract available as PB 99925s. 2p. Mi $1.25, Ph $1.25. See also BIOS FR 1385 (PB 81624).

RESULTS OF SHEAR FATIGUE TESTS OF JOINTS WITH 3-INCH-DIAMETER 24S-T31 RIVETS IN 0.064-INCH-THICK ALCLAD SHEET, by Marshall Holt. Aluminum Company of America, Pittsburg, Pa. Feb 1950. 40p photos, drawings, graphs, tables Mi $2.25, Ph $5.00. PB 100197

Shear fatigue tests were made of joints with 3 -inch-diameter 24S-T31 rivets in 0.064-inch-thick Alclad sheet of the following high-strength aluminum alloys: Alclad 24S-T3, Alcald 24S-T81, Alclad 24S-T36, Alclad 24S-T86, Alclad 75S-T6, Alclad 14S-T4, and Alclad 14S-T6. One series of tests was made of joints with 3 -inch-diameter 17S-T31 rivets in 0.064-inch-thick Alclad 75S-T6 aluminum alloy. The results showed that the design of the joint gives wider range of fatigue strengths than does the choice of material from the group studied. The results also showed that no one sheet alloy showed superiority over the others. NACA TN 2012.

SENDUST (A NICKEL-FREE SUBSTITUTE FOR PERMALLOY) INVENTED BY HONDA, MATSUMOTO AND YAMAMOTO, MANUFACTURED BY TOHOKU KINZOKU KOGYO, LTD., SENDAI. MAGNETIC AND ELECTRIC PROPERTIES OF FE-SI-AL ALLOYS, BY TATSUJI YAMAMOTO (PAPERS OF THE ELECTRICAL SOCIETY APR 1944) STUDIES ON MAGNETIC DUST CORES, BY TATSUJI YAMAMOTO, TRANSLATED FROM JOURNAL OF ELECTRICAL COMMUNICATION NO. 237, OCT 1942. Oct 1942-Jul 1946. 76p photos, graphs, tables Mi $3.50, Ph $10.00. PB 100007

Properties and manufacture of iron-silicon-aluminum alloys are discussed. Magnetic properties of Fe-Si-Al alloys were investigated. Permeability at high temperatures, effect of heat treatment and casting of Fe-Si-Al alloys are analyzed. A magnetic alloy with 6 - 12% Si, 3 - 8% Al and Fe, large permeability, small hysteresis loss and large electrical resistance was studied, as well as its application to dust cores. Appendix C to A.T.I.C. Report no. 260.

SMALL-ANGLE SCATTERING OF NEUTRONS IN IRON, by D. J. Hughes, M. T. Burgy, R. B. Heller and J. W. Wallace. U. S. Atomic Energy Commission. Argonne National Laboratory. Aug 1948. 7p drawings, graphs Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100163

Investigation to determine the cause of a neutron transmission effect in unmagnetized iron which is limited to less than 1^{o} angle of scattering; discussion of the his-

tory and theory leading up to this study; experimental procedure and discussion of results; figures. Manuscript has been submitted to the Physical Review for possible publication. AECD 2363. MDDC ANL HDY 594.

SPEKTRALANALYSE VON FEINZINKLEGIERUNGEN (SPECTRAL ANALYSIS OF FINE ZINC ALLOYS) von F. Wolbank und G. Lueg. Metallgesellschaft A. G., Frankfurt am Main, Ger. Nov 1940-May 1941. 28f photos (Text in German) Mi $2.00, Enl Pr $5.00. PB 100251

1. Zinc alloys - Spectrographic analysis - Germany 2. Micro BIOS FD 5001/47, Frames 462-482 3. Micro BIOS FD 5001/47, Frames 886-892.

Abstract available as PB 100251s. 2p. Mi $1.25, Ph $1.25.

SUMMARY REPORT ON CHROMIUM-BASE ALLOYS, BY W. L. HAVEKOTTE, C. T. GREENIDGE, AND C. H. LORIG, IN COOPERATION WITH OFFICE OF NAVAL RESEARCH, NAVY DEPT. CONTRACT NO. N5-ORI-111. Battelle Memorial Institute, Columbus, Ohio. Dec 1947. 37p photos, diagrs, graphs, tables Mi $2.25, Ph $5.00. PB 99968

Among the chromium-base alloys under developments , the 60Cr-15Fe-25Mo alloy showed a better combination of strength and ductility at 1600°F than any of the other alloys included in the temperature range. It appeared advisable to investigate the effects of variations in melting and casting techniques, of modifications in chemical composition, and of various heat treatments on the properties of this material. Except for a few trials of thermit melting, all of the alloys were produced by melting and casting in vacuum.

VILAS METOD FÖR KORTTIDSPROVNING AV ROSTSKYDDSMALNINGAR JÄMFÖRANDE PROVNING MED SALTVATTENDIMMA OCH I TREPIKSKAP (VILA METHOD FOR SHORT PERIOD TESTING OF ANTIRUST COATINGS COMPARED WITH THE SALT SPRAY AND THE TROPICAL CABINET METHODS) av Sigurd Köhler och Kurt Laurell. Sweden. Statens Provningsanstalt, Stockholm. 1949. 18p photos, graphs (Text in Swedish) Mi $1.75, Ph $2.50. PB 98869

1. Steel plates - Corrosion prevention - Sweden 2. Sweden. Statens Provningsanstalt, Stockholm. Meddelande 106.

Summary in English.

VORVERKUPFERUNG FÜR DIE PHOSPHATIERUNG (COPPER COATING OF IRON BY IMMERSION IN COPPER-COMPLEX SALT SOLUTIONS PRIOR TO PHOSPHATING) by Dr. Schall. Metallgesellschaft A. G., Frankfurt am Main, Ger. Jan 1941. 5f (Text in German) Mi $1.25, Enl Pr $2.50. PB 100308

1. Iron - Coatings - Germany 2. Copper salts - Uses - Germany 3. BIOS FR 335 LD 4. Micro BIOS FD 241/48, Frames 657-661.

Listed as R 1839 on p. 199 of BIOS FR 335. Abstract available as PB 100308s. 1p. Mi $1.25, Ph $1.25.

X-RAY AND METALLOGRAPHIC INVESTIGATIONS OF THE STRUCTURE OF HARD METALS. Studiengesellschaft Hartmetall, Berlin. 1936-1943. 69f photos, diagrs, tables (Text in German and English) Mi $3.00, Enl Pr $10.00. PB 100058

1. Metals, Hard - Structure tests - Germany 2. Metals, Hard - X-ray tests - Germany 3. Widia XX - Germany 4. Osram XX - Germany 5. Titanite - Germany 6. Böhlerite - Germany 7. Titanite U - Germany 8. Osram G.m.b.H., Berlin. 9. Krupp, Friedrich A. G., Widia Fabrik, Berlin 10. Micro BIOS FD 3933/47,

Frames 1-69 11. BIOS FR 925, Item 21,22 LD 12. Micro BIOS HEC 11057 13. Micro BIOS HEC 11121 14. Micro BIOS HEC 11123 15. Micro BIOS HEC 11130 16. Micro BIOS HEC 11143 17. Micro BIOS HEC 11146 18. Micro BIOS HEC 11147 19. Micro BIOS HEC 11151 20. Micro BIOS HEC 11152 21. Micro BIOS HEC 11159 22. Micro BIOS HEC 11181 23. Micro BIOS HEC 11195 24. Micro BIOS HEC 11223 25. Micro BIOS HEC 11395 26. Micro BIOS HEC 11070.

Micro BIOS HEC 11151 is in German and English. Listed in BIOS FR 925, Item 2,22 (App. 1) (PB 79296). Abstract available as PB 100058s. 3p. Mi $1.25, Ph $1.25.

MINERALS AND MINERAL PRODUCTS

(α,N) CROSS SECTION OF BORON, by R. L. Walker. U. S. Atomic Energy Commission. Los Alamos Scientific Laboratory. Feb 1948. 10p drawings, graphs, tables Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100165

Measurement of the cross section for the $B^{10,11}(\alpha,n)N^{13,14}$ reactions was made by determining the number of neutrons emitted from a thin boron target which are incident a known number of alpha particles of variable energy; experimental procedure and data; figures. Manuscript has been submitted to the Physical Review for possible publication. AECD 2383. MDDC LADC 507.

CRYSTAL STRUCTURES OF THH_2 AND ZRH_2, by R. E. Rundle, A. S. Wilson, R. Nottorf and R. F. Raeuchle. U. S. Atomic Energy Commission, Oak Ridge, Tenn. Jul 1948. 6p tables Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100119

The X-ray structures of ThH_2 and ZrH_2 are reported. Possible hydrogen positions in the hydrides are discussed. AECD 2120.

EVIDENCE FOR A NEW ISOTOPE OF POTASSIUM, by Roy Overstreet, Louis Jacobson, and P. R. Stout. U. S. Atomic Energy Commission, Oak Ridge, Tenn. Jul 1948. 6p photo, drawing, graphs Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100145

A study of the K isotopes produced by the bombardment of argon with helium ions revealed the presence of an isotope with a 22.4 hour half life; the new isotope has two beta components of approximately .25 Mev and 18 Mev maximum energies; evidence suggests K-43 produced by reaction A-40(α,p)K-43. AECD 2246. MDDC UCRL 155.

FLORIDA LIMESTONE AS A PAINT EXTENDER, by A. L. Kimmel and Mack Tyner. Florida. University. College of Engineering. Engineering and Industrial Experiment Station, Gainesville, Fla. Jan 1948. 6p photo, diagr, graphs, tables Available from the Florida Engineering and Industrial Experiment Station, College of Engineering, Univ. of Florida, Gainesville, Fla., Ralph A. Morgen, Director. PB 100016

1. Limestone 2. Paints - Extenders.

Technical Paper no. 18.

HYPERFINE STRUCTURE OF TRITIUM, by Edward B. Nelson and John E. Nafe. U. S. Atomic Energy Commission, Oak Ridge, Tenn. Dec 1948. 7p graph, table

Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100171

The hyperfine structure of the ground state of tritium was measured by the atomic beam magnetic resonance method; apparatus, method, and experimental procedure described; theoretical and experimental values given; references. AECD 2431.

METHOD FOR THE SPECTROCHEMICAL DETERMINATION OF THALLIUM IN ORES, CONCENTRATES, DUSTS AND CHEMICALS, by Graham W. Marks and E. V. Potter. U. S. Bureau of Mines. 21p photos, graphs, tables Mi $2.00, Ph $3.75. PB 98408 1. Thallium - Determination 2. BM RI 4461.

NEW MEASUREMENT OF THE PACKING FRACTIONS OF THE NICKEL ISOTOPES, by A. E. Shaw. U. S. Atomic Energy Commission. Argonne National Laboratory. Sep 1948. 4p diagr, drawing, table Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100159

Procedure and results for measurements of packing fractions of Ni^{58}, Ni^{60}, Ni^{61}, Ni^{62}, and Ni^{64} with use of a new source of nickel ions. Manuscript has been submitted to the Physical Review for possible publication. AECD 2351. MDDC ANL AJD 256.

NEW TECHNIQUE FOR THE DETERMINATION OF HEATS OF SUBLIMATION OF SLIGHTLY VOLITILE SUBSTANCES, by O. C. Simpson and R. J. Thorn. U. S. Atomic Energy Commission. Argonne National Laboratory. May 1948. 7p drawing, graph Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100117

For the vapor pressure the data obtained gives $\log_{10} p(mm) = - \frac{3.821 \times 10^4}{T} \pm$ 11.019. The writers agree that the total evidence indicates that the spectroscopic value of $\Delta H_1 = 170.6 + 0.2$ kcal per mole at (0^oK) is the correct one for graphite evaporating into the $\bar{3}P$ state. Manuscript has been submitted to the Journal of Chemical Physics for possible publication. AECD 2110. MDDC ANL 4158.

NYA ANVÄNDNINGSOMRADEN FÖR ICKE MALMFÖRANDE SVENSKA MINERAL 1. SMÄLTKATALYSATORER VID GLASFRAMSTÄLLNING. (INVESTIGATIONS OF SWEDISH NON-FERROUS METALS. 1. GLASS SMELTING PROCESS), by J. Arvid Hedvall och B. Helmerson. Chalmers University of Technology, Gothenberg, Sweden. 1949. 25p graphs, table (Text in Swedish) Mi $2.00, Ph $3.75. PB 99864 1. Glass - Manufacture - Sweden 2. Chalmers University of Technology, Gothenberg, Sweden, Transactions, no. 89.

Institutionen för Silikatkemisk Forskning 20. Abstract in English.

QUANTITATIVE SPECTROGRAPHIC ANALYSIS OF THE RARE EARTH ELEMENTS. DETERMINATION OF MAJOR CONSTITUENTS IN COMPLEX MIXTURES, by Velmer A. Fassell. U. S. Atomic Energy Commission, Oak Ridge, Tenn. Jul 1948. 14p graphs Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100121

The specific examples discussed are the determination of yttrium and gadolinium in the concentration range of 10 to 100 per cent. The procedures involve the high current d-c arc excitation of rare earth oxide sample-ceric oxide-graphic mixtures. Selected lines of cerium are used as internal standards. Manuscript has been submitted to Journal of the Optical Society of America for possible publication. AECD 2154.

PROGRESS REPORT ON PRELIMINARY INVESTIGATION OF METAL-BONDED CERAMICS (PROJECT 252) by A. R. Blackburn and T. S. Shevlin. Ohio State University Research Foundation, Columbus, Ohio. Jan 1947. 37p photos, drawings (part fold.), tables Mi $2.25, Ph $5.00. PB 85770

Gives preliminary data on forming methods of bodies composed of ceramic oxides and metal powders. Preliminary data on body binders and lubricants for pressing; binders for vibration and extrusion; and binders and deflocculants for casting metal-bonded ceramic bodies and preliminary data on furnace design, operation, and temperature measurement; and atmosphere purification and control for the sintering of metal-bonded ceramic bodies. AAF T-2 TR 21.

PROJECT CIRRUS, BY VINCENT J. SCHAEFER. GENERAL ELECTRIC CO., RESEARCH LABORATORY, SCHENECTADY, N. Y. QUARTERLY PROGRESS REPORT NO. 7. Mar 1949. 10p Mi $1.25, Ph $1.25. PB 98870

1. Silver iodide 2. Rain, Simulated 3. Clouds - Formation.

Report RL 168. Second quarterly progress report issued under Contract no. W-36-039-SC-38141.

PROJECT CIRRUS, BY VINCENT J. SCHAEFER. GENERAL ELECTRIC CO., RESEARCH LABORATORY, SCHENECTADY, N. Y. QUARTERLY PROGRESS REPORT NO. 8. Jun 1949. 10p Mi $1.25, Ph $1.25. PB 98871

1. Silver iodide 2. Rain, Simulated 3. Clouds - Formation.

Report RL 233. Third Quarterly progress report issued under Contract no. W-36-039-SC-38141.

PROJECT CIRRUS, BY VINCENT J. SCHAEFER. GENERAL ELECTRIC CO., RESEARCH LABORATORY, SCHENECTADY, N. Y. QUARTERLY PROGRESS REPORT NUMBER 9. Sep 1949. 9p Mi $1.25, Ph $1.25. PB 99434

1. Silver iodide 2. Rain, Simulated 3. Clouds - Formation.

Fourth quarterly report issued under contract no. W-36-039-SC-38141. For earlier reports see PB 98870, PB 98871. Dept. of the Army project 3-99-07-022.

PROPERTIES OF A BORON CARBIDE-IRON CERAMAL, by W. G. Lidman and H. J. Hamjian. U. S. Lewis Flight Propulsion Laboratory, Cleveland, Ohio. Mar 1950. 20p photos, drawings, graph, tables Mi $1.75, Ph $2.50. PB 100264

The elevated-temperature properties of a boron carbide ceramal containing approximately 13-percent iron by volume in the temperature range of 1600° to 2600° F were investigated in order to obtain information concerning ceramals that form a bonding phase. The properties evaluated were room- and elevated-temperature modulus of rupture, resistance to fracture by thermal shock, density, and oxidation characteristics. These properties were compared with those of hot-pressed boron carbide. NACA TN 2050.

SEARCH FOR SHORT-LIVED Y, ZR, AND CB FISSION PRODUCTS, by Leon J. Brown and Seymour Katcoff. U. S. Atomic Energy Commission. Los Alamos Scientific Laboratory. Aug 1948. 2p Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100173

Short discussion of experimental observations made during bombardments in which some fission product separation was effected by utilizing differences in recoil ranges in air. Manuscript has been submitted to the Journal of Chemical Physics for possible publication. AECD 2468. MDDC LADC 569.

SILVER IODIDE SMOKE, BY BERNARD VONNEGUT. GENERAL ELECTRIC CO. RESEARCH LABORATORY, SCHENECTADY, N. Y. OCCASIONAL REPORT NUMBER 13, PROJECT CIRRUS. Jul 1949. 34p photos, drawings, graphs Mi $2.25, Ph $5.00. PB 98981

1. Silver iodide 2. Smokes, Artifical 3. Project Cirrus no. 13 4. SIG Contract no. W-36-039-SC-38141 5. GE RL 227.

Supported jointly by the Signal Corps and Office of Naval Research under Signal Corps Contract no. W-36-039-SC-38141. G. E. Requisition EDG 25022 Dept. of the Army Project 3-99-07-022. Signal Corp Project 1728.

SYNTHETIC MICA RESEARCH PROJECT. PROGRESS REPORT NO. 1, SEP 1, 1946-NOV 30, 1946, BY LEON S. WARD. COLORADO. SCHOOL OF MINES, GOLDEN, COLO. CONTRACT NO. W-36-039-SC-32258. Nov 1946. 7p Mi $1.25, Ph $1.25. PB 99963

The general situation regarding the present production and uses of natural mica has been surveyed. A great deal of work has been done on the composition and crystalline structure of mica. Enough of this has been reviewed to show that in the synthesis of the mineral the high temperature necessary will probably require substitution of fluoride for hydroxide in the crystal structure. Apparently the synthetic product will more closely approximate phlogopite than muscovite.

SYNTHETIC MICA RESEARCH PROJECT, BY LEON S. WARD. COLORADO SCHOOL OF MINES, GOLDEN, COLORADO. PROJECT REPORT NO. 2 DEC 1, 1946 TO FEB 28, 1947. n.d. 9p Mi $1.25, Ph $1.25. PB 99941

The development of synthetic mica is outlined. Signal Corps contract no. W-36-039 sc 32258. File no. 16023-PH-46-91 (SCEL).

THORIUM STANDARD SAMPLES, by Clement J. Rodden. U. S. National Bureau of Standards. Jun 1947. 18p table Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 99800

Methods and results of quantitative analysis of thorium and uranium ores are reported from United States, English and New Zealand laboratories. Techniques and procedures are detailed. MDDC 1220.

ORDNANCE AND ACCESSORIES

DIE HERSTELLUNG VON HARTMETALL-WERKZEUGEN FÜR DIE MUNITIONS-FERTIGUNG DURCH LÄPPEN MIT BORKARBID (PRODUCTION OF HARD METAL PROFILE TOOLS FOR MUNITIONS MANUFACTURE BY LAPPING WITH BORON CARBIDE). Studiengesellschaft Hartmetall, Berlin. Nov 1942. 4f table (Text in German) Mi $1.25, Enl Pr $2.50. PB 100470

1. Munitions industry - Tools - Germany 2. Tools, Profile - Manufacture - Germany 3. Boron carbide - Uses - Germany 4. BIOS FR 925 LD 5. Micro BIOS HEC 11386 6. Micro BIOS FD 3928/47, Frames 1-3.

English abstract included. Abstract available as PB 100470s. 1p. Mi $1.25, Ph $1.25. Listed in BIOS FR 925 p. 37.

INSTRUCTIONS ON FIRE PREVENTION AND FIRE FIGHTING AT HARBOURS WHERE EXPLOSIVES, PACKED PETROL OR DANGEROUS GOODS ON SHIPS CARRYING EXPLOSIVES ARE INVOLVED. Gt. Brit. Ministry of Supply. Explosives Storage and Transport Committee. 1950. 5p Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $.10. PB 100285
1. Explosives - Fire fighting - Gt. Brit. 2. Explosives - Handling - Gt. Brit. 3. Harbor protection systems - Gt. Brit. 4. Fire prevention - Harbors - Gt. Brit.

PACKING AND PACKAGING

AN ESTIMATION OF EVAPORATION LOSSES ON LARGE LIQUID OXYGEN TANKS OF VARIOUS SHAPES, by Vincent B. Diebold and Robert W. Roundy. U. S. Air Force. Aero-Medical Laboratory, Wright Field, Ohio. Oct 1947. 12p graphs Mi $1.75, Ph $2.50. PB 98639
1. Tanks, Storage 2. Evaporation 3. Oxygen, Liquid - Storage 4. AAF TSEAA MR 660-122-A.

FIVE WEEK EXPOSURE OF VARIOUS PACKAGING PROCEDURES FOR AIRCRAFT ENGINE PISTON RINGS, by J. E. Carroll and T. A. Walb. Mar 1945. 33p photos, tables Mi $2.25, Ph $5.00. PB 98396
Investigations were made to evaluate by humidity cabinet exposure tests, the relative merits of various packaging techniques for aircraft engine piston rings. The tests were run at 120°F and 90-95% relative humidity for two weeks and then reduced to 100°F for a 3-week period. NAM AML 2551 pt. XVII.

QUALIFICATION TESTS OF 25.7 CUBIC INCH HIGH PRESSURE GAS CYLINDERS, by Curtis L. Musgrove. U. S. Air Materiel Command. Engineering Division. Aero-Medical Laboratory. Nov 1949. 13p photos Mi $1.75, Ph $2.50. PB 100141
1. Cylinders, Gas - Tests 2. Andrews-Alderfer Processing Co., Akron, Ohio 3. AAF TSEAA MR 660-128-D.

QUALIFICATION TESTS OF 295 CUBIC INCH HIGH-PRESSURE STEEL, GAS CYLINDER, by Courtney A. Metzger. U. S. Air Materiel Command. Engineering Division. Aero-Medical Laboratory. Dec 1949. 17p photos Mi $1.75, Ph $2.50. PB 100143
1. Cylinders, Gas - Tests 2. Andrews-Alderfer Processing Co., Akron, Ohio 3. AAF TSEAA MR 660-128-I.

PHOTOGRAPHIC AND OPTICAL GOODS

COMPARISON STUDY OF NTB AND MEDIUM LANTERN SLIDE EMULSIONS FOR AUTORADIOGRAPHS, by George A. Boyd. U. S. Atomic Energy Commission, Oak Ridge, Tenn. May 1948. 7p photos, graphs Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100115
The two emulsions are shown to be approximately equivalent in sensitivity to high energy beta particles. AECD 2106. MDDC UR 33.

DEVELOPMENT OF PORTABLE AUTOFOCUS REFLECTING PROJECTOR, PROJECT 8-35-03-003. INTERIM REPORT, 13 MAY 1949, by Frank A. McFarland. U. S. Army. Corps of Engineers. Engineer Research and Development Laboratories, Fort Belvoir, Va. May 1949. 43p photos, drawings Mi $2.50, Ph $6.25. PB 100003

Report covers the development and testing of a light weight, portable, autofocus reflecting projector. This projector is installed in a truck or trailer, for use in transferring detail from aerial photographs or maps at various scales to map manuscripts at compilation scale. Specifications are included. ERDL R 1125.

ION EXCHANGE PROCESS FOR DEMINERALIZATION OF PHOTOGRAPHIC WASH WATER, BY H. P. GREGOR AND H. N. SHERMAN. U. S. CAMP EVANS SIGNAL LABORATORY, BELMAR, N. J. REPORT NO. 4, FINAL REPORT. MAY 1. 1948 - MAY 31, 1949. Jun 1949. 76p photos, graphs, tables Mi $3.50, Ph $10.00. PB 100031

1. Washes, Photographic.
Dept. of Army Proj. no 3-99-04-052. Signal Corps Proj. No. 195B.

THE RIPPLE-TANK AS AN AID TO PHASE-FRONT VISUALIZATION, by Allen H. Schooley. U. S. Naval Research Laboratory, Bellevue, D. C. Oct 1949. 19p photos, drawings, graphs Mi $1.75, Ph $2.50. PB 100002

Water ripples are used for the qualitative and semi-quantitative study of phase fronts near two-dimensional models of antenna structures. Electronically driven probe-vibrators are used to excite the water surface of a glass ripple-tank. Synchronously chopped light is directed through the tank to a ground glass screen where the phase-front shadow patterns appear stationary. NRL R 3559.

SINGLE-PULSE PHOTOGRAPHY, A NEW TOOL FOR RADAR ANALYSIS, by Lawrence C. Mansur. U. S. Air Force. Cambridge Research Laboratories, Cambridge, Mass. Sep 1949. 29p photos, diagrs Mi $2.00, Ph $3.75. PB 100018

A technique for photographing successive video pulses at medium and high radar repetition rates is described. Examples of the use of this technique with an MTI-equipped radar are given. AAF CRL E 5051.

SOME NOTES ON THE PRODUCTION OF THE PRONTOR II SHUTTER, by H. R. Husband, and R. Annan. May 1947. 19p drawings Mi $1.75, Ph $2.50. PB 96868

1. Cameras - Shutters - Germany 2. Shutters, Camera (Prontor II) - Germany 3. BIOS FR 1807, Item 9.

STRIPPING FILM TECHNIQUES FOR HISTOLOGICAL AUTORADIOGRAPHS, by George A. Boyd and Agnes I. Williams. U. S. Atomic Energy Commission, Oak Ridge, Tenn. Jun 1948. 10p photos, drawings Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100112

Techniques are described for using stripping film NTB emulsions for studying alphagraphs of blood smears, identifying histological bodies containing aggregates of alpha-emitting elements, and preparing betagraphs without emulsion staining. AECD 2066. MDDC UR 29.

General

BERNOULLI'S THEOREM FOR VISCOUS COMPRESSIBLE FLUIDS, by C. A. Truesdell. U. S. Naval Research Laboratory, Bellevue, D. C. Oct 1949. 7p Mi $1.25, Ph $1.25. PB 100099

In any motion of a viscous compressible fluid in which the vorticity is steady, a finite expression of the form $v^2/2+...$ is given explicitly, and a construction for the curves along which it is a function of time only is indicated. In the special case of an incompressible fluid subject to conservative extraneous force, the finite expression reduces to that of the classical Bernoulli theorem, and the curves are defined in terms of the velocity field only, so that, the Bernoulli theorem yields a formula for the pressure in terms of purely kinematic observables. NRL R 3558.

CHARAKTERISTIKONTHEORIE. (THEORY OF CHARACTERISTICS), by W. Tollmien. U. S. National Committee for Aeronautics. Sep 1949. 28p graphs Mi $2.00, Ph $3.75. PB 98913

A development of the theory of characteristics is given. The distinction between the lattice point and field methods is carefully discussed. Translation of Technische Hochschule, Dresden, Archiv No. 44/2, Chapter II. NACA TM 1242.

CONFERENCES DES 31 JUILLET, 1 ER ET 2 AOUT 1947 SUR LES PROBLEMES NON-STATIONNAIRES DE LA DYNAMIQUE DES GAZ. (NON-STATIONARY PROBLEMS OF GAS DYNAMICS), by H. Schardin. Laboratoire d'Etudes Balistiques, Saint Louis, France. Aug 1947. 7f (Text in French) Mi $1.25, Enl Pr $2.50. PB 98895

Problems of unsteady gas flow are discussed. The discussion deals with the basic equations of aerodynamics, i.e., the continuity equation, the impulse equation, and the energy equation, as formulated by Schardin. Problems concerning one-dimensional unsteady flow, pseudo-steady flow, and compression shocks are also considered. English digest only. See also PB 98894.

CONFERENCES DES 31 JUILLET, 1 ER ET 2 AOUT 1947 SUR LES PROBLEMES NON STATIONNAIRE DE LA...GAZ PROBLEMES UNIDIMENSIONAL A SOLUTION EXACTE. (ACCURATE SOLUTION OF ONE DIMENSIONAL PROBLEMES IN GAS DYNAMICS), by Prof. Sauter. Laboratoire d'Etudes Balistiques, Saint Louis, France. Aug 1947. 5p (Text in French) Mi $1.25, Enl Pr $2.50. PB 98894

Non-stationary problems of gas-dynamics are discussed. The contribution of the present investigation to the solution of the problem discussed consists in establishing a new adiabatic equation wherefrom an exact solution can be derived without cumbersome calculations. English digest only. See also PB 98895.

MATHEMATICAL DEVELOPMENT OF THE END-POINT METHOD, by S. Frankel and S. Goldberg. U. S. Atomic Energy Commission. Los Alamos Scientific Laboratory. Apr 1945. 46p diagrs, tables Limited supply mimeo $.20. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.20. PB 100109

The end-point method of treatment of integral equations is mathematically developed and its application to the Milne kernel studied in detail. The general solution of the Wiener-Hopf integral equation is first obtained. The Milne kernel appears in applying this method to the integral equation describing the diffusion and multiplication of neutrons in multiplying and scattering media. Much of this report will be in part repetition of material treated in MDDC LADC 79. Manuscript has been submitted to the Physical Review for possible publication. AECD 2056. MDDC LADC 76.

NOTE ON THE ANALOG COMPUTATION OF DETERMINANTS, by R. E. Roberson and W. McCool. U. S. Naval Research Laboratory, Bellevue, D. C. Oct 1949. 12p diagrs Mi $1.75, Ph $2.50. PB 100040

A method for evaluating determinants, depending upon the solution of a sequence of linear algebraic equations, is given. The mechanization is arranged so that the McCool stabilizing procedure for these equations can be applied directly at the first appearance of instability. The size of the REAC installation limits the order of determinants which can be evaluated by this method. NRL R 3557.

ON THE THEORY OF THICKNESS OF WEAK SHOCK WAVES, by C. S. Wang Chang. Michigan. University. Department of Engineering Research, Ann Arbor, Mich. Aug 1948. 20f graphs Mi $1.75, Enl Pr $3.75. PB 98896

A consistent theory for the shock thickness of wear shock waves is developed. Following the idea of the Enskog development, the shock thickness is developed in a power series of M-1. To the first approximation, the Stokes-Navier equations are used, with stopping at the first power of M-1. It is seen that the results are identical with those obtained by Thomas, if Thomas' final result is also developed in power series in M-1. To the second order, the Burnett terms are included, wherefater the calculation is carried to $(M-1)^2$, etc. The results obtained are applied to a monoatomic gas. Report no. UMH-3-F. APL/JHU CM 503.

REPORT FOR THE YEAR 1947. Gt. Brit. Dept. of Scientific and Industrial Research. National Physical Laboratory. 1949. 63p Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $.35. PB 100026

Brief accounts of research in aerodynamics, electrical and metallurgical engineering, mathematics, physics, electronics, and shipbuilding.

Nuclear

CONDENSATION OF PURE HE^3 AND ITS VAPOR PRESSURES BETWEEN 1.2^{o} AND ITS CRITICAL POINT, by S. G. Sydoriak, E. R. Grilly and E. F. Hammel. U. S. Atomic Energy Commission. Los Alamos Scientific Laboratory. Dec 1948. 5p graphs, tables Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100169

Describes experimental procedure; tabulated and graphical data. Manuscript has been submitted to the Physical Review for possible publication. AECD 2395. MDDC LADC 584.

DISTRIBUTION IN MASS AND CHARGE OF FISSION PRODUCTS, by K. H. Kingdon. U. S. Atomic Energy Commission, Oak Ridge, Tenn. Knolls Atomic Power Laboratory. Sep 1947. 4p graphs Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100156

Brief discussion concerning why fission products are divided into 2 distinct mass groups separated by a marked minimum; a hypothesis is presented and graphs included to support the hypothesis. AECD 2579.

EFFECT OF THE TEMPERATURE OF THE MODERATOR ON THE VELOCITY DISTRIBUTION OF NEUTRONS WITH NUMERICAL CALCULATIONS FOR H AS MODERATOR, by E. P. Wigner and J. E. Wilkins, Jr. U. S. Atomic Energy Commission. Oak Ridge National Laboratory. Sep 1944. 10p graphs Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100153

An integral equation is set up governing the energy distribution of neutrons which are being slowed down uniformly throughout the entire space by a uniformly distributed moderator whose atoms are in motion with a Maxwellian distribution of velocities; with H as moderator, the integral equation reduces to a differential equation. AECD 2275. MDDC CP 2156.

THE K SPECTRA OF ELEMENT 61, by L. E. Burkhart, W. F. Peed, E. J. Spitzer. U. S. Atomic Energy Commission, Oak Ridge, Tenn. May 1948. 7p photos, tables Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100116

The K lines of the X-ray spectra of element 61 were obtained on a transmission type spectrograph. The wave length of the lines and the experimental method are discussed. Manuscript has been submitted to the Physical Review for possible publication. AECD 2107.

MASS SPECTROGRAPHIC ASSIGNMENT OF RUBIDIUM ISOTOPES, by Frederick L. Reynolds and D. C. Karraker, David H. Templeton. U. S. Atomic Energy Commission, Oak Ridge, Tenn. Sep 1948. 3p photos, tables Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100164

Mass spectrographic investigation of rubidium isotopes produced by bombardment of bromine with helium ions in the 60-inch and 184-inch cyclotrons; experimental data. Manuscript has been submitted to the Physical Review for possible publication. AECD 2373. MDDC UCRL 186.

NEUTRON AND PROTON BINDING ENERGIES IN THE REGION OF LEAD, by Katherine Way. U. S. Atomic Energy Commission. Oak Ridge National Laboratory. Jan 1949. 3p table Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100177

Theory and results for calculation of neutron and proton binding energies for Tl, Pb, Bi, Po, and At, with neutrons from 124 to 131 enclusive. Manuscript has been submitted to the Physical Review for possible publication. AECD 2484.

NUCLEAR PHYSICS RESEARCH, by J. N. Cooper. Jan 1948. 6p Mi $1.25, Ph $1.25. PB 98204

The progress made in the construction of a Van de Graaff electrostatic generator with the necessary auxiliary equipment for use in connection with nuclear physics research is described. Progress toward the assembly of a vacuum system and the accelerator tube has been made. The high-voltage system has been improved and the electrostatic generator is gradually approaching its final form, but the analyzing equipment and the proton source have yet to be constructed. OSURF 4.

OBSERVATIONS OF NAPHTHALENE SCINTILLATIONS DUE TO TRITIUM BETA RAYS, by R. F. Taschek and H. T. Gittings. U. S. Atomic Energy Commission. Los Alamos Scientific Laboratory. Sep 1948. 3p graph Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100152

Experimental procedure and apparatus described; representative data included in graphical form. Manuscript has been submitted to the Physical Review for possible publication. AECD 2273. MDDC LADC 552.

ON THE APPLICATION OF NEUTRON TECHNIQUES TO THE EXPERIMENTAL INVESTIGATION OF THE LOW TEMPERATURE PROPERTIES OF H3 OR H4-HE^3 SYSTEMS, by L. Goldstein. U. S. Atomic Energy Commission. Los Alamos Scientific Laboratory. Jun 1948. 4p Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100150

It is shown theoretically that the use of these neutron transmission techniques is feasible; the suggested method is described. AECD 2259. MDDC LADC 546.

RADIOISOTOPES, A NEW CHEMICAL TOOL, by G. H. Guest. National Research Council of Canada. Atomic Energy Project. Jun 1949. 6p drawings, graphs, tables Available from National Research Council of Canada, Chalk River, Ontario $.10. PB 100014

Some fundamental facts about radioactivity and isotope production are considered. Radioisotopes as tracers, in chemical processing, in metallurgy, in agriculture, and in other uses are described. Paper presented at annual conference of Chemical Institute of Canada, Halifax, May 30-Jun 1, 1949. NRCC 2068.

SEARCH FOR GAMMA RAYS FROM HE^6 AND F^{18}, by William J. Knox. U. S. Atomic Energy Commission, Oak Ridge, Tenn. Aug 1948. 3p graph Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100151

Describes procedure for absorption measurements; discussion of results. Manuscript has been submitted to the Physical Review for possible publication. AECD 2261. MDDC UCRL 159.

STATISTICAL ERROR IN ABSORPTION EXPERIMENTS, by M. E. Rose and M. M. Shapiro. U. S. Atomic Energy Commission, Oak Ridge National Laboratory. May 1948. 22p graphs Limited supply mimeo $.10. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.10. PB 100123

The geometry for optimum transmission and the best apportionment of counting times among the incident and transmitted beams and background have been investigated; also determined were; (a) minimum statistical error for a given total counting time; (b) statistical error and the best distribution of counting times for non-optimum geometry; (c) sensitivity of accuracy or total counting time to deviations from optimum transmission. Manuscript has been submitted to the Physical Review for possible publication. AECD 2197.

TRANSPORT PHENOMENA IN A COMPLETELY IONIZED GAS IN PRESENCE OF A MAGNETIC FIELD, by Rolf Landshoff. U. S. Atomic Energy Commission. Los Alamos Scientific Laboratory. May 1949. 14p tables Limited supply mimeo $.05. Also available from U. S. Atomic Energy Commission, Oak Ridge, Tenn. Mimeo: $.05. PB 100157

Presentation of an elaborate theoretical treatment which takes into consideration the interaction between electrons; this theory describes the behavior of free electrons in a completely ionized gas in presence of a magnetic field, and is derived from the kinetic theory of gases. Manuscript has been submitted to the Physical Review for possible publication. AECD 2590.

RUBBER AND RUBBER PRODUCTS

BUNA S OF HIGH-GRADE ELECTRICAL PROPERTIES. I. G. Farbenindustrie A. G., Schkopau, Ger. 1942. 12f (Text in German) Mi $1.75, Enl Pr $3.75. PB 100347
1. Buna S (Trade name) 2. Rubber, Buna - Patents - Germany 3. Rubber, Buna - Electrical properties - Germany 4. Micro BIOS FD 2238/47, Frames 1-11.
English abstract included. Abstract available as PB 100347s. 1p. Mi $1.25, Ph $1.25. Report on this subject is Micro BIOS FD 1478/48.

ELASTICIZER 32, BUNA 32 AND 85, BUNA SIII, PERVINAN, DIPROXIDE. I. G. Farbenindustrie A. G., Schkopau, Ger. Oct 1940-Dec 1944. 236f graphs, tables (Text in German) Mi $8.25, Enl Pr $31.25. PB 100343
1. Plasticizer 32 (Trade name) 2. Buna 32 (Trade name) 3. Buna 85 (Trade name) 4. Buna S3 (Trade name) 5. Pervinan (Trade name) 6. Diproxid (Polymerization regulator) 7. Micro BIOS FD 2259/47, Frames 1-235.
English abstract included. Abstract available as PB 100343s. 2p. Mi $1.25, Ph $1.25.

FATTY-ACID-FREE BUNA S 4. I. G. Farbenindustrie A. G., Schkopau, Ger. 1943-1944. 27f graphs, tables (Text in German and English) Mi $2.00, Enl Pr $5.00. PB 100083
1. Buna S4 (Trade name) 2. Micro BIOS FD 2398/47, Frames 1-25.

GOSEI GOMU NO KENKYO (SYNTHESIS OF RUBBER), by Junji Furukawa. Kyoto Imperial University. Chemical Laboratory. n.d. 13p Mi $1.75, Ph $2.50. PB 98752
Preliminary formulas for a new synthetic rubber embodying the manufacture of monovinylacetylene from acetylene, butadiene from monovinylacetylene, and methyl-vinylketone are presented. A theoretical test for polymerization is outlined. AAF T-2 T/5760.

IGELIT PCU PLANT PRODUCTS: IGELIT D ABOUT 40%. I. G. Farbenindustrie A. G., Schkopau, Ger. 1944. 3f (Text in German) Mi $1.25, Enl Pr $2.50. PB 100342
1. Deutsche Celluloid Fabrik, Eilenburg, Ger. 2. Igelit D (Trade name) 3. Micro BIOS FD 2261/47, Frames 1-3.
English abstract included. Abstract available as PB 100342s. 1p. Mi $1.25, Ph $1.25.

IGELIT WASTE MATERIAL. I. G. Farbenindustrie A. G., Ludwigshafen, Ger. 1942-1943. 45f (Text in German) Mi $2.50, Enl Pr $7.50. PB 100066
1. Igelit (Trade name) 2. Igelit PCU (Trade name) 3. Vinidur - Uses - Germany 4. KUTEKO (Kunststoff Technische Kommission) 5. Micro BIOS FD 1628/48, Frames 1-42.
Includes English abstract. Abstract available as PB 100066s. 1p. Mi $1.25, Ph $1.25.

MONTHLY REPORTS ON IGELIT PCU PLANT. I. G. Farbenindustrie A. G., Schkopau, Ger. 1942-1943. 24f graphs, tables Mi $2.00, Enl Pr $5.00. PB 99937
1. Buna S (Trade name) 2. Igelit PCU (Trade name) 3. Micro BIOS FD 2260/47, Frames 1-22.
Includes English abstract. Abstract available as PB 99937s. 2p. Mi $1.25, Ph $1.25.

SELF ADHESIVE COATINGS OF LATEX FOR SELF-STICKING ENVELOPES, LETTER CARDS, ETC. Metallgesellschaft A. G., Frankfurt am Main, Ger. 1938. 51f tables (Text in German) Mi $2.75, Enl Pr $8.75. PB 100067
1. Rubber, Latex - Uses - Germany 2. Adhesives, Latex - Germany 3. Adhesives - Paper to paper - Germany 4. Micro BIOS FD 4868/47, Frames 48-93.
Includes English abstract. Abstract available as PB 100067s. 1p. Mi $1.25, Ph $1.25.

STORAGE TEST WITH BUNA S. I. G. Farbenindustrie A. G., Schkopau, Ger. 1936-1941. 148f graphs, tables (Text in German) Mi $5.75, Enl Pr $20.00. PB 100346
1. Buna S (Trade name) 2. Rubber, Buna - Storage - Germany 3. Micro BIOS FD 2240/47, Frames 1-136.
English abstract included. Abstract available as PB 100346s. 1p. Mi $1.25, Ph $1.25.

TECHNICAL EXPERIMENTS FOR THE PRODUCTION OF BUNA WITHOUT THE USE OF LINOLEIC ACID. I. G. Farbenindustrie A. G., Ludwigshafen, Ger. 1942. 10f tables (Text in German) Mi $1.25, Enl Pr $2.50. PB 100065
1. Rubber, Buna - Production - Germany 2. Linoleic acid - Substitutes in synthetic rubber production - Germany 3. Nekal BXG (Trade name) 4. KAUTEKO (Anwendungstechnische Kommission für Kautschuk) 5. Micro BIOS FD 1473/48, Frames 1-8.
Includes English abstract. Abstract available as PB 100065s. 2p. Mi $1.25, Ph $1.25.

TECHNOLOGICAL TESTING AND DEVELOPMENT WORK AT THE CENTRAL RUBBER LABORATORY, LEVERKUSEN. PAPER SUBMITTED TO KAUTEKO OCT 31, 1941, by Dr. Stöcklin and others. I. G. Farbenindustrie A. G., Leverkusen, Ger. Oct 1941. 24f graphs, tables (Text in German) Mi $2.00, Enl Pr $5.00. PB 100331
1. Rubber, Synthetic - Research - Germany 2. Rubber, Synthetic - Polymerization - Germany 3. Igetex (Trade name) 4. Renacit (Trade name) 5. Vulkollan (Trade name) 6. Micro BIOS FD 1422/48, Frames 1-21.
English abstract included. Abstract available as PB 100331s. 3p. Mi $1.25, Ph $1.25.

TESTING OF IGELIT PCU. I. G. Farbenindustrie A. G., Schkopau, Ger. 1941-1944. 113f drawings, graphs, tables Mi $4.75, Enl Pr $16.25. PB 99939
1. Igelit PCU (Trade name) 2. Micro BIOS FD 2366/47, Frames 1-110+1.
Includes English abstract. Abstract available as PB 99939s. 2p. Mi $1.25, Ph $1.25. See also PB 99935, PB 98150, PB 99938, PB 97880 and PB 99937.

UNTERSUCHUNG VON ADIPINSÄURE-GLYCERIN-ESTER DER FA. DEHYDAG ALS ERWEICHER FÜR BUNA-S. (EXAMINATION OF ADIPIC ACID GLYCERINE ES-

TER OF THE FIRM OF DEHYDAG AS A SOFTENER FOR BUNA-S) VON DR. WEINBRENNER. UNTERSUCHUNG VON THIODIBUTTERSÄURE DIBUTYL ESTER (EXAMINATION OF THIODIBUTYRIC DIBUTYL ESTER) von Dr. Schneller. I. G. Farbenindustrie A. G., Schkopau, Ger. 1938-1941. 26f photos, graphs, tables (Text in German) Mi $2.00, Enl Pr $5.00. PB 100348

1. Adipic acid - Esters - Germany 2. Butyric acid, Thiodi - Dibutyl ester - Germany 3. Buna S (Trade name) 4. Rubber, Buna - Plasticizers - Germany 5. Micro BIOS FD 2237/47, Frames 1-22.

English abstract included. Abstract available as PB 100348s. 2p. Mi $1.25, Ph $1.25.

UNTERSUCHUNGSBERICHT ÜBER VON LEVERKUSEN BEI DER KAUTEKO VERGESCHLAGENE NEUE BUNATYPEN (TEST REPORT ON NEW BUNA S TYPES DEVELOPED BY LEVERKUSEN) by Huth. I. G. Farbenindustrie A. G., Schkopau, Ger. 1942. 43f photos, graphs, tables (Text in German) Mi $2.50, Enl Pr $7.50. PB 100345

1. Buna S (Trade name) 2. Rubber, Buna - Tests - Germany 3. Micro BIOS FD 2253/47, Frames 1-40.

English abstract included. Abstract available as PB 100345s. 2p. Mi $1.25, Ph $1.25.

VERGLEICHENDE UNTERSUCHUNGEN ZUR GUMMITECHNISCHEN BEWERTUNG VERSCHIEDENER BUNA S-MATERIALIEN VON SCHKOPAU (COMPARATIVE INVESTIGATIONS TO DETERMINE THE RUBBER-TECHNICAL VALUE OF VARIOUS BUNA S MATERIALS PRODUCED BY SCHKOPAU). I. G. Farbenindustrie A. G., Schkopau, Ger. Feb 1940. 72f graphs, tables (Text in German) Mi $3.50, Enl Pr $11.25. PB 100344

1. Buna S (Trade name) 2. Rubber, Buna - Evaluation - Germany 3. Micro BIOS FD 2254/47, Frames 1-64.

English abstract included. Abstract available as PB 100344s. 2p. Mi $1.25, Ph $1.25.

VERSUCHE UEBER DEN ERSATZ DES BUTYLAMINE IM BUTADIENKONTAKT DURCH ANDERE AMINE. (EXPERIMENTS ON THE REPLACEMENT OF BUTYLAMINE BY OTHER AMINES IN THE BUTADIENE CATALYST), by Dr. Haufe and Dr. Jacobi. I. G. Farbenindustrie A. G. Sep 1941. 59p graph, tables (Text in German and English) Mi $2.75, Ph $7.50. PB 98756

The replacement of butylamine by other amines in the butadiene catalyst was investigated. Primary butylamine phosphate, a component of the butadiene catalyst, shows a very high rate of decomposition at the reaction temperature of 270°C. In order to detect other amines with slower rates of decomposition, amine phosphates were prepared and tested. Results are given in tabular form. Translated by Standard Oil. Co.

STRUCTURAL ENGINEERING

BUCKLING OF THIN-WALLED CYLINDER UNDER AXIAL COMPRESSION AND INTERNAL PRESSURE, by Hsu Lo, Harold Crate, and Edward B. Schwartz. U. S. Langley Aeronautical Laboratory, Langley Field, Va. Jan 1950. 29p diagrs, graphs

table Mi $2.00, Ph $3.75. PB 99981

An investigation was made of a thin-walled cylinder under axial compression and various internal pressures to study the effect of the internal pressure on the compressive buckling stress of the cylinder. A theoretical analysis based on a large-deflection theory was also made. The theoretically predicted increase of compressive buckling stress due to internal pressure agrees fairly well with the experimental results. NACA TN 2021.

CHARTS FOR DETERMINATION OF STRENGTH OF SHEAR BEAMS WITH AND WITHOUT ACCESS HOLES, by N. B. Robbins. Consolidated Vultee Aircraft Corp., Fort Worth Div., Fort Worth, Tex. Structures Bulletin A-8. n.d. 5p graphs Mi $1.25, Ph $1.25. PB 99960

Two charts are given for estimating the strength of conventional aluminum alloy shear beams with and without access holes. The one chart applies to webs with round access holes with stiffeners, not beads, and with a rivet factor greater than .75. The chart is applicable to access holes from small to the ratio of hole diameter to web depth of .8.

CURRENT READ PROBLEMS NO. 8-R: THICKNESS OF FLEXIBLE PAVEMENTS. U. S. HIGHWAY RESEARCH BOARD. REVISED EDITION. Nov 1949. 49p photos, tables, graphs Available from Highway Research Board, 2101 Constitution Ave., Washington 25, D. C. PB 99884

The empirical methods presented fall into the following subdivisions: Section 1. A compilation of payment thicknesses for highway loads in representative states in relation to the soils groups. Section 2. Ten design methods in use by state highway departments which have evolved systematic procedures for the design of flexible pavements in their respective localities are presented for information.

EFFECT OF CENTRIFUGAL FORCE ON THE ELASTIC CURVE OF A VIBRATING CANTILEVER BEAM, by Scott H. Simpkinson, Laurel J. Eatherton and Morton B. Millenson. U. S. Aircraft Engine Research Laboratory, Cleveland, Ohio. 1948. 11p photos, drawing, graphs Available from Supt. of Documents, U. S. Government Printing Office, Washington 25, D. C. $.15. PB 100194

A study was made to determine the effect of rotation on the dynamic-stress distribution in vibrating cantilever beams. The results of a mathematical analysis are presented together with experimental results obtained by means of stroboscopic photographs and strain gates. NACA 914.

SMALL-DEFLECTION THEORY FOR CURVED SANDWICH PLATES, by Manuel Stein and J. Mayers. U. S. Langley Aeronautical Laboratory, Langley Field, Va. Feb 1950. 20p diagr Mi $1.75, Ph $2.50. PB 100182

A small-deflection theory that takes into account deformations due to transverse shear is presented for the elastic-behavior analysis of orthotropic plates of constant cylindrical curvature, with considerations of buckling included. The theory is applicable primarily to sandwich construction. NACA TN 2017.

VENTILATIONENS STORLEK I BOSTÄDER (RATE OF VENTILATION IN DWELLINGS) av John Rydberg och Ake Arnell. Sweden. Statens Kommittee för Byggnadsforskning. 1949. 82p Mi $3.75, Ph $11.25. PB 99998

The investigations comprised measurements of the rate of air change in dwellings, offices, etc. equipped with the usual types of ventilation systems. In performing the

measurements, small quantities of hydrogen were released in the rooms to be studied, after which the rate at which the gas was carried away by ventilation was determined with a specially constructed instrument. In Swedish with summary in English. Meddelanden no. 15.

TEXTILES AND TEXTILE PRODUCTS

AMERICAN FELT COMPANY, K 3567 FELT, FLAME RESISTANCE TEST, by T. Kuhn. Martin, Glenn L., Co., Baltimore, Md. Engineering Laboratory. Aug 1944. 2f Mi $1.25, Enl Pr $2.50. PB 98465
1. K3567 (Felt) 2. Felt - Tests.
Report 41174.

FATIGUE STUDIES OF VARIOUS CLOTHS UNDER REPEATED LOADINGS, by W. A. Corry. U. S. Air Materiel Command. Engineering Division. Materials Laboratory, Wright Field, Dayton, Ohio. Jan 1947. 12p graph, tables Mi $1.75, Ph $2.50. PB 98861

Fatigue studies of various cloths were made to determine the changes in percent ultimate elongation and ultimate tensile strength, and the tendency of various cloths to take "permanent set" after repeated loadings. AAF TSEAM M6291.

IMPACT INVESTIGATION ON TEXTILE MATERIALS, by N. G. Battles. U. S. Air Materiel Command. Engineering Division. Materials Laboratory, Wright Field, Dayton, Ohio. Dec 1946. 13p photos Mi $1.75, Ph $2.50. PB 98856

Progress is reported on the investigation and development of basic data on the behavior of nylon under dynamic loading. The purpose of this work is the development of a suspension line having maximum energy absorption per unit mass. The results and future work on the dynamic evaluation of the construction and the dynamic evaluation of the processing involving effect of shrinkage, effect of twist balance, and effect of braiding tension are discussed. AAF TSEAM M5118.

REPORT ON EFFECT OF SEA WATER ON SILK AND NYLON PARACHUTE CLOTH, by A. Mogul. U. S. Naval Air Material Center. Aeronautical Materials Laboratory, Philadelphia, Pa. Jun 1944. 29p tables Mi $2.00, Ph $3.75. PB 98867

Samples of silk and nylon parachute fabrics were immersed in a bell-jar of sea water for periods of time ranging from 15 minutes to 8 weeks. After each period of immersion, 5 sets of 3 samples each were removed and one set tested for change in weight, tensile strength and tear resistance, one sample being left unrinsed, one being given a normal rinse, and the last being given a complete rinse. The remaining four sets were exposed to room conditions for 2,4,8 and 12 weeks, and given the same tests. Recommendations are made for handling of parachutes after immersion in sea water.

REPORT ON THE JAPANESE COTTON INDUSTRY, by W. T. Kroese. Dec 1949. 36p tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. PB 100359

For reference and loan use only. May not reproduce well.

SWELLING OF JUTE BALES, by Edward V. Gant. Connecticut. University. Engineering Experiment Station, Storrs, Conn. May 1946. 8p photos, graphs, table Available from University of Connecticut, Engineering Experiment Station, Storrs, Conn. PB 100349

1. Jute - Expansion.

Bulletin v. 1, no. 1.

STUDIES OF 240 DENIER, 12 FILAMENT NYLON YARN VERSUS 210 DENIER, 34 FILAMENT NYLON YARN. U. S. Air Materiel Command. Engineering Division, Materials Laboratory, Wright Field, Dayton, Ohio. Oct 1947. 8p tables Mi $1.25, Ph $1.25. PB 98785

Object of investigation was to study certain properties of 240-denier, 12-filament nylon yarn and to determine its possibilities for use in USAF textile materials. Shear strength, tenacity, abrasion, and elongation tests were made on the new material and also on the conventional 210-denier, 34-filament yarn. Comparisons were made between the two. Title page is illegible. Author is illegible. This report will not reproduce well. AAF TSEAM M 5339, Add. 1.

TRANSPORTATION EQUIPMENT

Aeronautics

Aircraft

CHARTS OF AIRPLANE ACCELERATION RATIO FOR GUSTS OF ARBITRARY SHAPE, by Bernard Mazelsky. U. S. Langley Aeronautical Laboratory, Langley Field, Va. Feb 1950. 15p graphs Mi $1.75, Ph $2.50. PB 100186

The solution of a simplified equation of motion is presented in chart form for estimating the acceleration ratios for airplanes flying through gusts of specific and arbitrary shape. NACA TN 2036.

EFFECT OF AFTERBODY LENGTH AND KEEL ANGLE ON MINIMUM DEPTH OF STEP FOR LANDING STABILITY AND ON TAKEOFF STABILITY OF A FLYING BOAT, by Roland E. Olson and Norman S. Land. U. S. Langley Aeronautical Laboratory, Langley Field, Va. 1949. 17p photos, drawings, graphs, table Available from Supt. of Documents, U. S. Government Printing Office, Washington 25, D. C. $.15. PB 100195

Tests were made to fill partly the need for information on the effect of afterbody dimensions on the hydrodynamic stability of a flying boat in smooth water. The dimensions investigated were depth of step, angle of afterbody keel, and length of afterbody. NACA 923.

EFFECT OF TUNNEL CONFIGURATION AND TESTING TECHNIQUE ON CASCADE PERFORMANCE, by John R. Erwin and James C. Emory. U. S. Langley Aeronautical Laboratory, Langley Field, Va. Feb 1950. 51p photos, drawing, graphs Mi $2.75, Ph $7.50. PB 100184

An investigation has been conducted to determine the influence of aspect ratio, boundary-layer control by means of slots and porous surfaces, Reynolds number, and tunnel end-wall condition upon the performance of airfoils in cascades.

A representative compressor-blade section of aspect ratios of 1,2, and 4 has been tested at low speeds in cascades with solid and with porous side walls. Two-dimensional flow was established in porous-wall cascades of each of time three aspect ratios tested; the flow was not two-dimensional in any of the solid-wall cascades. NACA TN 2028.

EXPERIMENTAL INVESTIGATION OF THE NACA 63_1-012 AIRFOIL SECTION WITH LEADING-EDGE AND MIDCHORD SUCTION SLOTS, by George B. McCullough and Donald E. Gault. U. S. Ames Aeronautical Laboratory, Moffett Field, Calif. Feb 1950. 23p drawings, graphs Mi $2.00, Ph $3.75. PB 100139

The NACA 63_1-012 airfoil section provided with boundary-layer suction slots near the leading edge and midchord was investigated. Substantial increases in maximum lift above those obtained with the nose slot alone were realized. The effectiveness of the suction slots increased with increased suction flow. Lift, drag, pitching-moment, pressure-distribution, and boundary-layer data are given for two different leading-edge slots operating in conjunction with the midchord slot. NACA TN 2041.

FIRST-ORDER THEORY FOR UNSTEADY MOTION OF THIN WINGS AT SUPERSONIC SPEEDS, by Barry Moskowitz and W. E. Moeckel. U. S. Lewis Flight Propulsion Laboratory, Cleveland, Ohio. Feb 1950. 26p diagrs, graphs Mi $2.00, Ph $3.75. PB 100138

An approximate method is presented for determining the pressure distribution due to unsteady motion for thin wings of fairly general plan form. The method is valid for arbitrary motions when the second derivative of the perturbation velocities with respect to time is not large. The load distributions due to two types of unsteady motion are evaluated as function of time for a swept wing with straight supersonic leading and trailing edges. NACA TN 2034.

LOW-SPEED INVESTIGATIONS OF A THIN, FAIRED, DOUBLE-WEDGE AIRFOIL SECTION WITH NOSE FLAPS OF VARIOUS CHORDS, by Leonard M. Rose and John M. Altman. U. S. Ames Aeronautical Laboratory, Moffett Field, Calif. Feb 1950. 19p photo, drawing, graphs Mi $1.75, Ph $2.50. PB 100183

A faired, double-wedge airfoil section was investigated with plain nose flaps of 12, 16, 20, and 25 percent of the air foil chord. Section lift, drag, and pitching-moment data were obtained at a Reynolds number of 5.8 million and a Mach number of 0.17. NACA TN 2018.

Land Transportation

BAUGRUPPE 12, MITTELSTÜCK (CONSTRUCTION GROUP 12, MIDDLE SECTION). Gethaer Waggonfabrik A. G., Gotha, Ger. Oct 1944. 134f drawings, tables (Text in German) Mi $5.50, Fnl Pr $18.75. PB 100084

1. Automotive engineering - Germany 2. AAF Micro Reel 2028, Frame 304. Text in German script almost illegible. Frames are numbered 305-440.

RING SPRINGS FOR RAILWAYS COUPLINGS AND DRAW AND BUFFER GEAR. Ringfeder G.m.b.H., Uerdingen, Ger. 1937-1946. 58f drawings (Text in German and English) Mi $2.75, Enl Pr $8.75. PB 100081

1. Springs, Ring - Germany 2. Couplings, Railway - Germany 3. Micro BIOS FD 1836/46, Frames 1-23+33.

RECENT ACCESSIONS
(Available for reference thru O.T.S.)

AERODYNAMICS OF ROCKETS AND RAMJETS RESEARCH AND DEVELOPMENT WORK AT LUFTFAHRTFORSCHUNGSANSTALT HERMANN GOERING, VOLKENRODE, by R. H. Norris. May 1945. 27p photos, drawings, tables. CIOS XXVII-7, Items 4, 6. PB 97039

AIRCRAFT MATERIAL SPECIFICATION. APPROVAL PROCEDURE FOR PROPRIETARY MATERIALS AND PROCESSES. Gt. Brit. Ministry of Supply. Aug 1949. 3p. MS DTD MS 900B. PB 100045

ALUMINIUM-ALLOY-COATED ALUMINIUM ALLOY SHEETS AND COILS. Gt. Brit. Ministry of Supply. Nov 1949. 4p tables. MS DTD MS 687A. PB 77818r

ALUMINIUM-NICKEL-SILICON BRASS TUBES. (MEDIUM AND HIGH PRESSURES). Gt. Brit. Ministry of Supply. Nov 1949. 4p drawing, tables. MS DTD MS 323A PB 100371

C-124 A AIRPLANE, ENGINEERING ACCEPTANCE INSPECTION, by Charles Castellano for Fred R. Heckerman. U. S. Air Materiel Command. Engineering Division. Aero-Medical Laboratory, Wright Field, Dayton, Ohio. Nov 1949. 7p. AAF TSEAA MR 720-145. PB 99326

CASE-CARRYING, LIFE RAFT. DRAWING NO. 50H3501, by Albert B. Hearld. U. S. Air Materiel Command. Engineering Division. Aero-Medical Laboratory, Wright Field, Dayton, Ohio. Oct 1949. 8p photos AAF TSEAA MR 670-1R. PB 99299

COAL MINES ACT, 1911. REGULATIONS AND ORDERS RELATING TO SAFETY AND HEALTH. GT. BRIT. MINISTRY OF FUEL AND POWER. 1948 EDITION. 1949. 199p tables PB 99431

DESIGN OF PARACHUTES FOR LARGE BOMBS, by W. D. Brown and K. Harrison. Gt. Brit. Ministry of Supply. Aeronautical Research Council. 1949. 22p drawings, graphs. ARC RM 2324. PB 99887

DESTROYER 1936 A: CALCULATIONS FOR A DOUBLE RUDDER INSTALLATION. Deutsche Schiff- und Maschinenbau A. G., Bremen, Ger. 1938. 61p drawings, graphs, tables ATS 64. PB 98343

I. DEVELOPMENT OF AN INSTRUMENT FOR THE RAPID SIMPLE APPLICATION OF MEASURED QUANTITIES OF THERAPEUTIC AND PROPHYLACTIC AGENTS TO THE SKIN SURFACE. II. REPORT OF A CASE OF POSSIBLE ALLERGIC SENSITIVITY EITHER TO BAL; OR, MORE PROBABLY, TO REACTION PRODUCTS PRODUCED BY COMBINATIONS OF BAL AND LEWISITE ON OR IN THE SKIN. III. VESICULATION ON NORMAL SKIN OF THE RABBIT'S ABDOMEN AFTER APPLICATION OF MUSTARD, BY DAVID P. BARR AND MARION B. SULZBERGER. REPORT OF SEP 1, 1942. Cornell University. Medical College. Committee on the Treatment of Gas Casualties. 1942. 19p tables PB 99021

EFFECTS OF MOTION RELATIONSHIPS ON SPEED OF POSITIONING VISUAL INDICATORS BY ROTARY CONTROL KNOBS, by Melvin J. Warrick. U. S. Air Materiel Command, Wright Field, Dayton, Ohio. Jul 1949. 20p photos, diagrs, graphs, tables. AAF TR 5812. PB 99559

EFFECTS OF SWEEP-BACK ON BOUNDARY LAYER AND SEPARATION, by Robert T. Jones. U. S. National Advisory Committee for Aeronautics. 1947. 3p drawings, graph NACA 884. PB 98329

FATIGUE AND CLOTHING, BY W. H. FORBES. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. MONTHLY PROGRESS REPORTS NO. 1,2,3,4,5, MAR 1942-JUL 1942. 7p PB 99248

FURTHER REPORT ON PENICILLIN TREATMENT OF EYES BURNED WITH HS, M-1 AND 1130, by Francis Heed Adler, Irving H. Leopold, Willard H. Steele and Alan S. Crandall. Pennsylvania. University. Dept. of Ophthalmology. Apr 1943. 7p graph, tables CMR CTGC 27. PB 99267

HEALTH OF THE SCHOOL CHILD. GT. BRIT. MINISTRY OF EDUCATION. CHIEF MEDICAL OFFICER. REPORT FOR THE YEARS 1946 AND 1947. 1949. 15p tables, photos PB 100025

IN-FLIGHT ACTIVITIES OF NAVIGATORS IN THE ATLANTIC AND PACIFIC AREAS, by Julien M. Christensen. U. S. Air Materiel Command, Wright Field, Dayton, Ohio. May 1949. 21p photos, graphs, tables AAF TR 5771 PB 99560

INSTRUMENTATION PROBLEMS OF THE VIBRATION FIELD TEST ENGINEER, by Dorman H. Jasper. n.d. 7p PB 99649

JET PROPULSION EQUIPMENT FOR BOMB-ABANDONED DEVELOPMENT FOR GERMAN BT 1000. GERMAN BT OR BOMBEN TORPEDOES: GERMAN TORPEDOES, AIRCRAFT, LAND; AND BOMBEN TORPEDOES, by W. P. Roop and others. Jan 1945. 15p drawings, tables PB 97044

LOW PRESSURE OXYGEN HOSE ASSEMBLIES, FLEX-O-TUBE COMPANY, PART NO. HA-9052, by Fred R. Heckerman. U. S. Air Materiel Command. Engineering Division, Aero-Medical Laboratory, Wright Field, Dayton, Ohio. Nov 1949. 3p AAF TSEAA MR 660-109-B-1 PB 99328

MISCELLANEOUS CALCULATIONS ON TYPE IX C, by E. Kanzler and others. Apr 1943. 135p drawings, graphs, tables ATS 65 PB 98344

MISCELLANEOUS REPORTS DEALING MAINLY WITH METALS, AND MINERALS, GLASS, BUILDING MATERIAL AND PETROLEUM. France. Ministère de la Production. 1937-1945. 406f (Text in German and English) Micro FIAT A 338, Frames 78-484 PB 95614

ON THE MOTION OF AN AEROFOIL UNDER THE SURFACE OF A HEAVY FLUID, i.e., A LIQUID, by M. V. Keldysch and M. A. Lavrentiev. Oct 1934. 58p graphs STS 75 PB 99573

POWER MARKET REPORT FOR UNITED STATES PORTION OF THE BARNHART ISLAND PROJECT, ST. LAWRENCE RIVER, FEB 1946. COSTS REVISED MAY 1947. U. S. Federal Power Commission. Bureau of Power. 1946-1947. 66p fold maps, fold graphs, tables PB 100224

POWER MARKET SURVEY. COLORADO RIVER, UPPER BASIN. PART I. POWER REQUIREMENTS. U. S. Federal Power Commission. Bureau of Power. San Francisco Regional Office, San Francisco, Calif. Sep 1947. 143p photos, fold maps, fold graphs, tables PB 100221

POWER MARKET SURVEY. MISSOURI RIVER BASIN. POWER REQUIREMENTS IN AREA A IN MONTANA. U. S. Federal Power Commission. Bureau of Power. Chicago Regional Office, Chicago, Ill. Feb 1949. 101p fold maps, tables PB 100210

POWER MARKET SURVEY. MISSOURI RIVER BASIN, AREA B. WYOMING - COLORADO. PART I. POWER REQUIREMENTS. U. S. Federal Power Commission. Bureau of Power. Chicago Regional Office, Chicago, Ill. Nov 1947. 99p fold maps, fold graphs, tables PB 100219

POWER MARKET SURVEY. MISSOURI RIVER BASIN. POWER REQUIREMENTS IN AREA E IN KANSAS-MISSOURI. U. S. Federal Power Commission. Bureau of Power. Chicago Regional Office, Chicago, Ill. Jun 1949. 123p fold maps, tables PB 100209

POWER MARKET SURVEY. MISSOURI RIVER BASIN, AREA D. NEBRASKA. PART I. POWER REQUIREMENTS. U. S. Federal Power Commission. Bureau of Power. Chicago Regional Office, Chicago, Ill. Nov 1947. 127p fold maps, fold graphs, fold tables PB 100222

POWER MARKET SURVEY. MISSOURI RIVER BASIN, AREA C. NORTH DAKOTA. PART I. POWER REQUIREMENTS. U. S. Federal Power Commission. Bureau of Power. Chicago Regional Office, Chicago, Ill. Nov 1947. 98p fold maps, fold graphs, fold tables PB 100220

POWER MARKET SURVEY. POWER REQUIREMENTS IN NEW HAMPSHIRE, VERMONT, MASSACHUSETTS, CONNECTICUT AND RHODE ISLAND. U. S. Federal Power Commission. Bureau of Power. New York Regional Office, New York, N. Y. Aug 1949. 139p photos, maps, graphs, tables PB 100216

POWER MARKET SURVEY, STATE OF NEVADA. U. S. Federal Power Commission. Bureau of Power, San Francisco Regional Office, San Francisco, Calif. and Nevada. Colorado River Commission. Feb 1949. 125p photos, maps, graphs, tables PB 100223

POWER REQUIREMENTS, STATE OF UTAH. U. S. Federal Power Commission. Bureau of Power, San Francisco Regional Office, San Francisco, Calif. and Utah. Colorado River Committee. Dec 1946. 176p photos, fold maps, fold graphs, tables PB 100225

PREVENTION OF RIVER POLLUTION. Gt. Brit. Ministry of Health. Central Advisory Water Committee. Rivers Polution Prevention Sub-Committee. 1949. 75p PB 99994